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ENTERED as second class matter January 23, 1917, at the Post Office at Easton, Pennsylvania, under the act of March 3, 1879, as 24 times a year; Scientific Edition monthly on the 5th; Practical Pharmacy Edition monthly on the 20th. Acceptance for mailing at a special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 10, 1918.

President Eisenhower has called on Congress to provide increased funds for basic research in the health fields. The President also asked Congress to set up a five-year Federal fund of $250,000,000 for matching grants to assist in construction of research and teaching facilities.

The Director of the Department of Medicine and Surgery of the Veterans Administration has directed all medical directors, all managers of all VA hospitals, centers, regional offices, domiciliaries, and benefits offices, as well as directors of outpatient clinics to permit all pharmacists to attend the convention of the American Pharmaceutical Association on April 8 to 13 in Detroit.

The U.S. Public Health Service has announced that under the voluntary allocation plan, a final decision as to postponement of the booster shot of Salk vaccine rests with state and local health departments and private physicians. This announcement was made in view of the fact that some health departments have inquired about the use of available supplies for the third or booster shot of the polio vaccine. Under ideal conditions of adequate supply, the unanimous conclusion is that no change should be made in the nationally recommended dosage schedule which calls for three injections of 1 cc. each, the second coming 4 to 6 weeks after the initial dose, and the third or booster dose coming 7 months or longer after the second injection.

The proposed public relations program for the drug industry fostered by the American Drug Manufacturers Association contemplates the setting up of a corporation to be known as the "Health News Institute" with an executive director and staff. Chet Shaw, formerly editorial director of Newsweek has been named executive director of the Institute with temporary offices at 342 Madison Avenue, New York.

Eli Lilly and Company announces that it is increasing the harvesting and testing of polio vaccine by 50%. Approximately 24,000,000 doses of Lilly vaccine have been released by the Federal government to date. The company is planning to submit a total of 60,000,000 cc. to the National Institutes of Health during the first 6 months of 1956.

Total numerical strength of the Armed Forces on January 31, 1956, based on preliminary reports, was 2,876,013. This represents a decrease of 11,003 from the December 31, 1955 combined strength of 2,887,016.

. . . *and last-minute news*

Senate Resolution 173 which provides for a study of juvenile delinquency in the United States includes authority to investigate the extent to which juveniles are violating Federal Laws relating to the sale or use of narcotics. It is anticipated that an appropriation of more than $100,000 will become available to the Committee and that its findings will be reported to the Senate prior to January 31, 1957.

Surgeon-General Leonard A. Scheele of the Public Health Service has been named to succeed himself for another four-year term and the Senate is expected to confirm his reappointment before April 6, when his present term expires.

Mrs. Harvey W. Wiley, widow of the late author of the first Federal Food and Drug Act, will be the guest of honor at a joint meeting of the Michigan Academy of Pharmacy and the Sections on Practical Pharmacy, Education and Legislation, and Pharmaceutical Economics on Friday afternoon, April 13, during the convention of the American Pharmaceutical Association in Detroit. This meeting will commemorate the 50th anniversary of the passage of the Federal Food and Drug Act as well as the 50th anniversary of the establishment of the National Formulary as one of the official compendia under Federal and State Food and Drug Laws. The Speaker on this occasion will be Mr. George T. Daughters, chief of the Chicago office of the Food and Drug Administration.

Beginning July 1, 1956, there will be a limited number of vacancies for direct appointment of pharmacists as commissioned officers in the Medical Service Corps of the Army, with concurrent call to active duty. For information contact the commanding general of your Army area, Attention: Army Medical Service Personnel Procurement Officer.

Senate Bill S3430 introduced by Senators Lister Hill of Alabama and John F. Kennedy of Massachusetts provides for a national medical library and the transfer of Armed Forces Medical Library to an independent Federal agency governed by a 17 member board of regents. The bill specifically names the professions to be represented on the board of regents and includes a representative of pharmacy.

George F. Smith, president of Johnson and Johnson, has been selected as "the outstanding citizen of New Jersey for 1955." This is an award of the Advertising Club of New Jersey and was a unanimous selection "in recognition of Mr. Smith's outstanding service to his community, his state and his country."

℞ information service

Members of the American Pharmaceutical Association are invited to submit their professional problems to The Journal, 2215 Constitution Ave., N. W., Washington 7, D. C. Inquiries should include all pertinent details.

Aerosol OT as Laxative

Please tell us where we can purchase Aerosol OT (dioctyl sodium sulfosuccinate)? This is used by injection of 2 cc. of 1% solution for severe constipation.—J.F.J., Minnesota.

Dioctyl sodium sulfosuccinate USP (Aerosol OT, American Cynamid Co.) may be administered orally or by rectal instillation. For oral use a 1% solution can be taken 1 cc. twice daily in orange juice or milk; infants, 4 drops twice daily; children up to 5 years, 10 drops twice daily. Rectally, a 0.1% concentration is used either alone or in a small saline or mineral oil retention enema.

Small lots of dioctyl sodium sulfosuccinate can be obtained from: Laboratory Center, Inc., 919 Washington St., Wilmington 1, Del.; Summers Laboratories, Inc., Ambler, Pa.; and other small lot suppliers. Proprietary products containing dioctyl sodium sulfosuccinate are: Doxinate capsules (20 mg. in each) and solution (1%) (Lloyd Brothers); Colace capsules (50 mg. in each) and solution (1%) (Mead Johnson).

Compound Ether Spirit

Can you help us find a new formula for the preparation of compound ether spirit?—J.D.G., New York.

We know of no "new" formula for the preparation of compound ether spirit, which was in N.F. IX but was not included in N.F. X. If the inquiry was prompted by the difficulty in obtaining ethereal oil, you might be advised that ether spirit is as effective as the compound spirit, the ethereal oil apparently contributing little, if anything, to the action of the preparation.

Dust Reducing Spray

Please give any information regarding a spray that keeps down dust and other allergenic substances from rugs and furniture.—F.G., Michigan.

The following information appeared in the July 11, 1955 issue of *Science News Letter:* Colloidal silica (Ludox, DuPont), when sprayed with a volatile solvent, coats the irregularities in the fibers of carpet or upholstery material and keeps dust particles out. Rugs and carpets pretreated with Ludox are being manufactured. Preparations of the material for household use are being formulated.

Liquid Dentrifrice

Would you please suggest a formula for a liquid type dentifrice.—G.B., New York.

The following formulas for liquid dentifrice products appear in *The Chemical Formulary* by H. Bennett, published in 1948 by the Chemical Publishing Company, Inc., Brooklyn, N.Y.

No. 1

Glycerin	180
Crystal sugar	160
Saccharin	1
Wetting agent (lauryl sulfate)	50
Salt	40
Amaranth red color in water (1%)	40
Distilled water	466
Quince seed infusion in water (5%)	500
Alcohol S. D. 38-B	540
Flavor	To suit

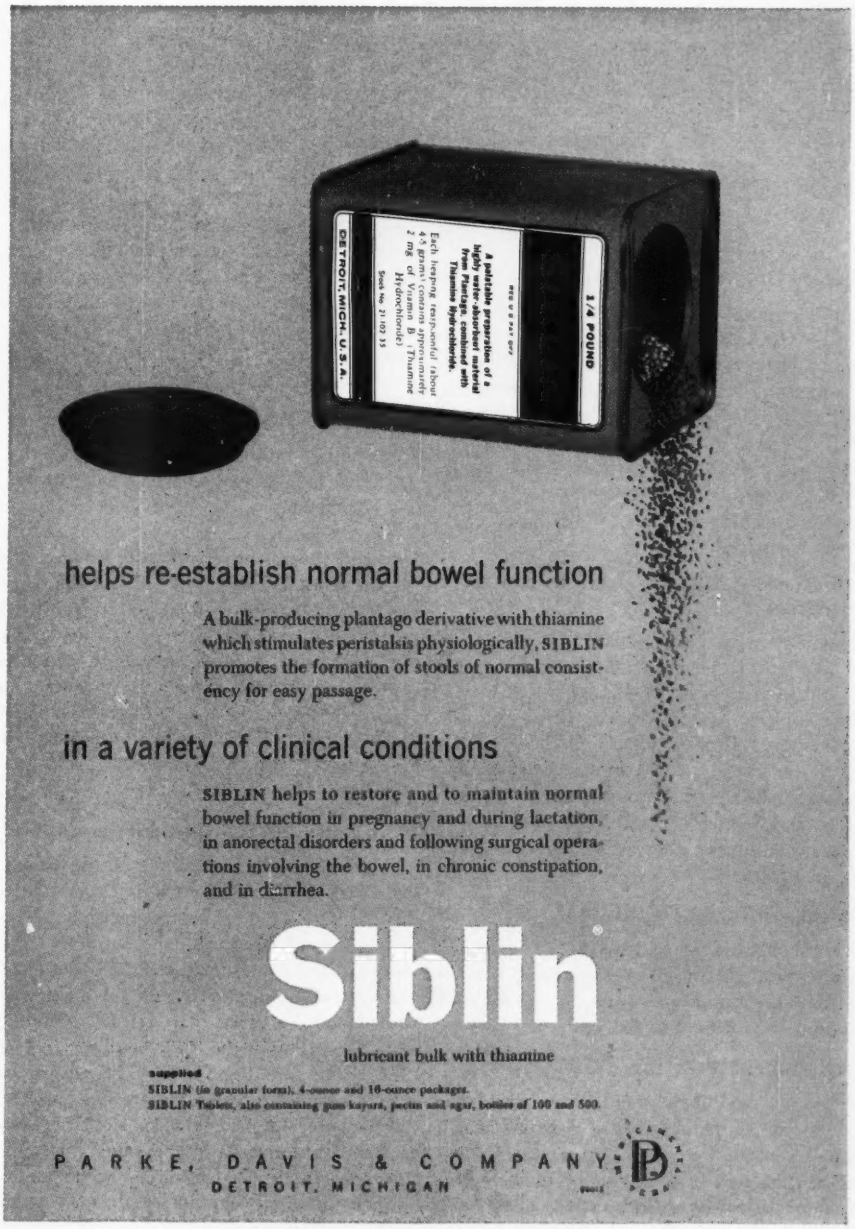
No. 2

Irish moss extract	1.5
Alkyl aryl sulfate (Nacconol LAL)	8
Alcohol S. D. 38-B	75
Distilled water	300
Salt	0.5
Amaranth red color in water (1%)	5
Flavor	2

To make either No. 1 or No. 2 the Irish moss or quince seed is first dispersed in hot water and filtered into the mixing tank, then the wetting agent is dissolved in this dispersion followed by the sugar, salt and color. Lastly the alcohol, in which the flavor has been dissolved, and the glycerin are mixed in. This solution is permitted to stand for from 5 to 10 days for thorough clarification, after which it is filtered and filled.

No. 3

Sodium alginate	4.0 Gm.
Distilled water	200.0 cc.
Allow this to stand overnight and add:	
Saccharin, soluble	0.25 Gm.
Distilled water	20.00 cc.
To the above add:	
Flavor	8.0 cc.
Alcohol	100.0 cc.
Glycerin	40.0 cc.
Then mix and add to:	
Sodium lauryl sulfate	20.0 Gm.
Distilled water	150.0 cc.
Finally add:	
Amaranth solution (5%)	1.0 cc.
Distilled water to make	500.0 cc.



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Progress in Medicine

Chlorpromazine Treatment of Causalgia

Chlorpromazine (Thorazine) HCl treatment with complete and dramatic success is reported for three patients with early cases of causalgia following injuries to the upper extremity in *J.A.M.A.*, **159,** 1626(Dec. 24, 1955). The dosage was initially 25 mg. daily, increased to 100 mg. daily.

Tubeless Gastric Acidity Test

Oral administration of a colorless form of an organic dye, azure A ion-exchange compound (Squibb), with water and testing the urine for dye content by conversion of the dye to the blue form corroborated gastric tube tests for presence of HCl in 82 of 84 patients and correctly identified the absence of HCl in 20 patients. The results are reported by Drs. J. T. Galambos and J. Kirsner in the December 1955 issue of the AMA *Arch. Internal Medicine.*

Mephenesin–Glutamic Acid in Acute Fibrositis

Combination of glutamic acid hydrochloride (300 mg.) with mephenesin (250 mg.) (Mephate) appeared to give enhanced effect in 56 of 68 patients exhibiting pain from acute primary fibrositis. Dr. R. N. Frohner reports in the Oct. 1955 issue of *Am. Pract. and Digest of Treatment* that the muscle relaxing effect was evident in about 20 minutes and was present within 60 minutes, if it were going to appear, after taking 2 capsules with half a glass of milk.

Mephobarbital in Grand Mal

Control of grand mal epileptic attacks by using mephobarbital (Mebaral) in twice the dosage of phenobarbital is reported by Dr. J. A. Bernard in *Southwestern Med.*, **36,** 466(1955).

Psychological Test for Epilepsy

Epileptics can have mental blackouts that may last for a fraction of a second and which will be indicated by a break in a series of coordinated answers to questions or tasks in picture-completion tests. Doctors at the Salt Lake City VA Hospital found that with known epileptic patients 44% showed definite evidence of this type of mental blackout, while such behavior was noted only in 17% of non-epileptics who had an organic brain damage, and in 9% of psychiatric or mentally ill patients with no trace of epilepsy.

Actinomycin C in Advanced Hodgkin's Disease

Treatment of six cases of advanced Hodgkin's and one of reticulum-celled sarcoma with actinomycin C (initially 100 mcg. i.v., then increased) caused marked regression in two patients and slight regression in two others. The side effects of the drug, administered in doses as high as 800 mcg. daily, included stomatitis and thrombocytopenia, according to Drs. J. R. Trounce, A. B. Wayte and J. M. Robson in *Brit. Med. J.*, **4953,** 1418(Dec. 10, 1955).

Uterine Cancer Detection

Examination of cells shed by the uterus and obtained in a fluid specimen from the vaginal vault indicates presence or absence of cancer cells and enables early diagnosis of uterine cancer. Results of a large-scale study of women in Memphis, Tenn., indicate that if the test were applied universally it might conceivably be responsible for the almost total eradication of advanced uterine cancer. The report of the studies by Surgeon General Leonard A. Scheele states that tests will be conducted in Louisville, Ky.; Madison, Wis.; Detroit, Mich.; Charlotte, N.C.; San Diego, Calif.; Providence, R.I.; Columbus, Ohio; and Washington, D.C.

Clinical Use of Fludrocortisone Acetate

Fludrocortisone (9-*a*-fluorohydrocortisone) acetate was shown to have a cortisone-like effect averaging 15 to 20 times as great as hydrocortisone in its ability to: inhibit pituitary stimulation of adrenal cortices; produce loss of nitrogen, calcium and phosphorus; inhibit inflammation; and produce a sense of well-being, according to Drs. G. J. Hamivi and R. F. Goldberg (*J.A.M.A.*, **159,** 1598, Dec. 24, 1955). The physicians report: "Fludrocortisone acetate has an effect on mineral and water metabolism similar to desoxycorticosterone but averaging about five times as great as desoxycorticosterone in its ability to promote sodium, chloride, and water retention and potassium diuresis. Its greatest clinical usefulness will probably be in adrenal insufficiency or adrenal surgery where both desoxycorticosterone and cortisone effects are desirable. Its usefulness in conditions where cortisone or hydro-

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cortisone alone has been beneficial will be limited by excessive sodium and water retention. Since its breakdown products in the doses used do not appreciably affect the urinary steroid values, an additional advantage is its use in those cases of acute adrenal insufficiency in which treatment may be necessary before diagnostic studies can be performed."

Heart Disease Research

Studies on heart disease should be directed especially to ischemic heart disease—cardiac disability, acute and chronic, arising from reduction or arrest of blood supply to the myocardium as a result of disease processes in the coronary arterial system, such as atherosclerosis and thrombosis. This is the recommendation of the World Health Organization Study Group headed by Dr. Herman Hilleboe of New York. The study group concluded that in the present state of knowledge the only advice it could give on the prevention of heart disease was: "Be moderate in all things."

The Powerful Placebo

Placebos have a high degree of therapeutic effectiveness in treating subjective responses, with apparent improvement being interpreted as real therapeutic effect in about 35% of cases, according to Dr. H. K. Beecher in *J.A.M.A.*, **159,** 1602(Dec. 24, 1955). This is shown in over 1,000 patients in 15 studies including: wound pain, the pain of angina pectoris, headache, nausea, phenomena related to cough and to drug-induced mood changes, anxiety and tension, the common cold, and human ailments where subjective factors enter. Evidence indicates that placebos are most effective when stress is greatest. They also produce toxic effects, both subjective and objective. The reaction (psychological) component of suffering has power to produce gross physical change. It is plain not only that therapeutic power of a drug under study must in most cases be hedged about by controls but also that studies of side-effects must be subjected to the same controls.

Salicylamide as Analgetic and Antirheumatic Agent

Salicylamide is not an effective analgetic or antirheumatic medicament in man, according to Drs. R. C. Batterman and A. J. Grossman in *J.A.M.A.*, **159,** 1619(Dec. 24, 1955). The double blindfold technique as applied to an evaluation of analgesic and antirheumatic drugs in ambulatory patients does not show any differentiation between placebo therapy or effective medicaments. The physicians state, "Each investigation group should determine the responsiveness to placebo medication for its particular type of patients and use these data as a control for evaluation of unknown analgesic or antirheumatic drugs."

Aldosterone and Sodium-Potassium Balance

The hormone aldosterone is secreted by the human adrenal, and the pituitary appears to have little control over it. The output in normal men is closely related to sodium and potassium intake and balance. "Aldosterone output is increased: in normal men on diets low in Na or high in K; in the nephrotic syndrome, congestive heart failure, hepatic cirrhosis, or toxemia of pregnancy during periods of exacerbation and accumulation of edema: effective treatment and improvement of the underlying condition result in reduced aldosterone output and diuresis; in tumors of the adrenal cortex which secrete aldosterone," according to the report by J. H. Luetscher, Jr., and R. H. Curtis, (*Annals Internal Med.*, **43**, 658. Oct. 1955).

Xanthines in Coffee, Tea and Cocoa

According to a report in *J.A.M.A.* (July 23, 1955) tests showed that the caffeine content in a cup of regular decaffeinated coffee is about one-third the amount in a cup of regular ground coffee, and a cup of instant decaffeinated coffee has from one-fourth to one-eighth as much caffeine as a cup of regular ground coffee. Later studies utilizing a different testing procedure (*J.A.M.A.*, Sept. 24, 1955) indicated that decaffeinated ground bean coffee and decaffeinated instant coffee actually do have about 97% less caffeine per cup than regular coffees. This substantiated advertising claims that 97% or more of the caffeine can be removed from coffee. Regular instant coffees were found to have about the same amount of caffeine as regular ground coffees. The earlier tests had indicated that a cup of regular instant coffee had about half as much caffeine as regular ground. The potential caffeine content of a cup of black tea is comparable to that of a cup of regular ground coffee, but if the tea is prepared according to directions, a cup contains only 65% of the potential amount. Green tea has about three-fourths as much caffeine as black tea. Twice as much xanthine (theobromine) was found in a cup of prepared cocoa as there was xanthine (caffeine) in a cup of coffee or tea.

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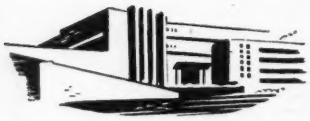

Hospital Pharmacy

by Gloria Niemeyer, *secretary,*
American Society of Hospital Pharmacists

With Hospital Pharmacists

■ Hospital pharmacists are urged to participate in National Hospital Week, which will be observed May 6–12. Following the theme "Your Hospital . . . For You and Your Community," emphasis during the week will be on planning for community needs—every day and in time of catastrophe.

The AMERICAN PHARMACEUTICAL ASSOCIATION will again offer a plaque as an award for the best pharmacy display in a hospital arranged by hospital pharmacists. To be eligible for this award, hospital pharmacists must be members of the A.PH.A. and the American Society of Hospital Pharmacists.

■ The Veterans Administration has announced plans for VA pharmacy residencies which are sponsored in cooperation with several schools of pharmacy. The programs offer a combination of graduate school study along with practical experience in a VA hospital. Applications are being received for positions of pharmacy resident in Los Angeles, Calif.; Buffalo, N.Y.; and Iowa City, Ia. Pharmacists interested in applying should file a Form 57 (application form) with the Executive Secretary, Central Board of U.S. Civil Service Examiners, Veterans Administration, Washington 25, D.C., before May 1, 1956.

■ Schools of Pharmacy offering the graduate program combined with an internship in hospital pharmacy have announced openings for the 1956 fall term. In most instances, applications must be received before May 1, 1956. A complete listing of Internship and Graduate Study Programs in Hospital Pharmacy is included in the March–April issue of *The Bulletin of the American Society of Hospital Pharmacists.*

■ The Catholic Hospital Association will hold its 41st Annual Convention in Milwaukee, Wis., May 21–24. An Institute for Hospital Pharmacists is scheduled on May 19–22 in conjunction with the convention. Arrangements are in charge of the C.H.A.'s Committee on Hospital Pharmacy Practice with the A.PH.A., the A.S.H.P., and the local hospital pharmacists' group as sponsoring organizations.

■ Dr. George F. Archambault, chief, Pharmacy Branch, Division of Hospitals, U.S. Public Health Service, has been named the 1956 recipient of the H. A. K. Whitney Award presented annually by the Michigan Society of Hospital Pharmacists for outstanding contributions to hospital pharmacy. Dr. Archambault is the immediate past president of the American Society of Hospital Pharmacists and a member-elect of the Council of the A.PH.A.

■ The A.S.H.P. Committee on Pharmacy and Pharmaceuticals met in Washington on March 6 to outline plans for inaugurating the Formulary Service. Dr. William Heller, chief pharmacist, University Hospital, University of Arkansas, Little Rock, Ark., is chairman of the committee.

■ The Southeastern Society of Hospital Pharmacists will meet in conjunction with the Southeastern Hospital Conference in Miami Beach, April 18–20. Announcement of the program has been made by the President, Terry Nichols.

■ The Wisconsin Society of Hospital Pharmacists held a one-day Seminar in Milwaukee on February 24. Principal speakers included Dr. Alex Berman of the University of Wisconsin School of Pharmacy, Madison, Wis.; Larry Summers and Peter Solyom, pharmacists at the University of Chicago Clinics, Chicago, Ill.; Dan Moravec, chief pharmacist at Lincoln General Hospital, Lincoln, Nebr.; Sylvester G. Dretzka, secretary of the Wisconsin State Board of Pharmacy, Milwaukee; and Wilbert Penberthy, narcotic agent, State of Indiana.

■ A Hospital Pharmacy Forum for Hospital Administrators is scheduled for May 2 by the Mississippi Society of Hospital Pharmacists. The principal speaker will be Grover C. Bowles, chief pharmacist at the Baptist Memorial Hospital, Memphis, Tenn.

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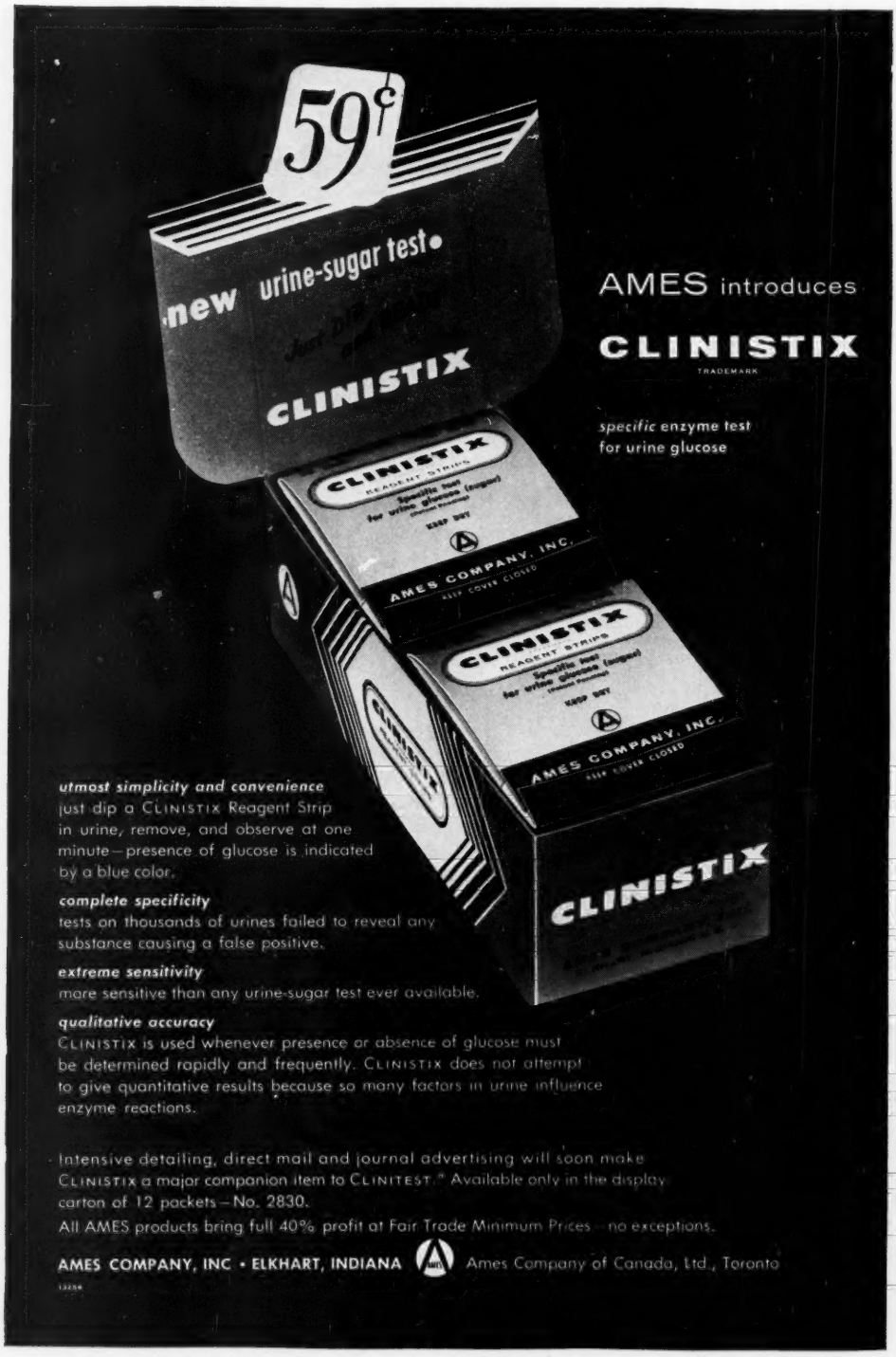

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FDA Criminal Actions

Drug companies in the United States voluntarily destroyed products valued at more than $300,000 because of age, deterioration and other defects. Some of these were recalled from distribution channels when the manufacturer learned that loss of potency would prevent their effective use. In many cases action was the direct result of official FDA inspection and analytical reports to the management of establishments handling drugs. An owner has the privilege of destroying defective goods prior to the time any action is instituted by the Government. Inspectors have no authority to order such destructions and diversions in lieu of seizure, but frequently these prompt actions by management protect the public without the expense of a court proceeding. Voluntary destruction of unfit merchandise does not, however, absolve the firm from prosecution when violations of the law are established.

Criminal prosecution cases terminated during January included:

Over-the-Counter Sales

Miami, Fla.—Refilling prescriptions for barbiturates without physicians' authorizations. Charges against firm dismissed; 2 individuals fined $100 each; another fined $50; case against the fourth individual nolle prossed because of his death in 1955.

Miami, Fla.—Refilling prescriptions for barbiturates and Barital sodium without physicians' authorizations. Firm and 3 individuals fined $100 each; payment of fine against firm suspended; case against fourth individual nolle prossed because of his death in 1955.

Chicago, Ill.—Shipping barbiturates without physicians' prescriptions. Fined $500 and court costs of $43.

Detroit, Mich.—Selling amphetamine, Banthine, and hormones without physicians' prescriptions. Firm fined $600; individuals fined $600 jointly, which was suspended for 1 year.

Detroit, Mich.—Selling penicillin without physicians' prescriptions. Owner fined $500; employee fined $50.

Detroit, Mich.—Selling hormones without physicians' prescriptions. Fined $250.

Philadelphia, Pa.—Selling amphetamine and thyroid without physicians' prescriptions. Fined $1,500, given a 1 year suspended jail sentence, and placed on probation for 3 years.

Knoxville, Tenn.—Selling amphetamine and hormones without physicians' prescriptions. First defendant fined $200 and placed on probation for 1 year; two others fined $50 each; another fined $500 and placed on probation for 1 year.

Knoxville, Tenn.—Selling amphetamine, Co-Elorine and thyroid without physicians' prescriptions. Each fined $50 and placed on probation for 1 year.

Misbranded Drug

Vin-Creo Products, Inc., and Dr. Abe A. Hopps, Cleveland, Ohio—"Vin-Creo—The Liquid Douche" misbranded by false and misleading statements in accompanying labeling that the drug was adequate and effective for preventing venereal disease; for relieving pain and distressed feeling in the pelvic region, sick headache, backache, abdominal bloating, irritability, puffiness, cramps, premenstrual tension, and dysmenorrhea; for treating inflamed ovaries and tubes; and for providing a protective film of antiseptic, germ-killing material over the cervix and the entire vaginal tract. Firm fined $400; sentence against individual deferred pending probation officer's report.

to comply with NEW REGULATIONS

HYPO *Record*

Legal requirements covering the sale of hypodermic needles and syringes are becoming more strict.

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What Americans Think of
THE MEDICAL PROFESSION

Survey Shows Public's Opinion of Physicians

Americans' feelings about their own physicians and physicians in general were brought out in the results of a study sponsored by the American Medical Association in order to find out what might be needed to improve medical services.

Three thousand persons were interviewed during 1955, and they were selected so that the proportion of people from various age, economic, geographical and other groups met the proportion of such people in the total U.S. population.

Here are some of the major results of the study: Eighty-two per cent of Americans have family physicians. While two-thirds of these people once had personal physicians other than their present one, their reasons for changing physicians rarely included personality clashes or lack of faith in their medical adviser's ability. The most frequently given reason (by 19 per cent) was that the patient or the physician moved. Only 5 per cent said they lost confidence and 2 per cent, that they "found a better doctor."

Fifty-eight per cent of these interviewees believed it mattered "a lot to choose the right doctor," giving as reasons "ability, training, and equipment" first, and confidence or sincerity next. Eight out of ten people said that their "doctor is different." For their reasons, 32 per cent cited personal interest, sympathy and kindness; 19 per cent, competence, intelligence, and education; 17 per cent, friendliness, personality, and manner; and 9 per cent, frankness and honesty. Small numbers mentioned availability, patience, understanding, acceptance of payment delays, and lower fees. None mentioned healing powers or use of wonder drugs, although those who said choice of physicians is not important did mention drug use as a factor.

Ninety-nine per cent of those persons having a personal physician said he was capable and 88 per cent "highly intelligent." Between 80 and 90 per cent felt their physician had enough personal interest, was frank enough, and gave his patients as much time as they liked.

People, when speaking of their own physicians, denied complaints listed in a true-false questionnaire. For example, 91 per cent denied that their physician thinks he is better than other people; 87 per cent said that he is as dedicated to serving mankind as he should be; 82 per cent denied he is too quick to recommend operations; 80 per cent said he is frank enough about their illnesses; 78 per cent denied he keeps patients waiting longer than necessary.

Seventy-nine per cent denied he charges too much; 77 per cent denied he plans to get rich quickly; 78 per cent denied his charges have gone up faster than other living costs; 74 per cent denied he is hard to reach for emergency calls; 71 per cent denied that he has the idea he is always right; and 66 per cent denied that he makes too much money compared with his patients.

Only three statements of complaint drew less than 66 per cent denial, but these were not answered by about half the interviewees. They were:

(1) Your doctor charges higher fees to people who carry medical insurance: 48 per cent denied, 39 per cent, no opinion.

(2) Your doctor splits fees on referrals to other doctors: 32 per cent denied, 57 per cent, no opinion.

(3) Your doctor gets commissions from druggists: 31 per cent denied, 52 per cent no opinion.

Most people gave the same reasons for liking physicians in general as they did for their own physicians, with some exceptions. They attached more importance to *friendliness* and *manner, healing* and *curing, dedication*, and *professional attitude* when describing personal physicians.

Given a chance to criticize, one third had no criticism and 15 per cent "Don't know what they like about most doctors." The leading complaint, listed by 13 per cent, was "Their charges and interest in money." Nine per cent mentioned each of these complaints: "Don't take time and hurry you too much," "Impersonal, cold, independent," and "Not frank, speak half-truths, dishonest." Some of those listing dislikes said their complaints referred only to "some, not most" practitioners.

The public does have a realistic idea of the number of years of *training* required to practice medicine. The most common answer, given by 28 per cent, was eight years; the next most common, 10. Seven years was the shortest period mentioned, and 19 per cent said 11 years or more.

According to the largest number (26 per cent), physicians never retire. Twenty-one per cent gave 65–69 years as average retirement age, while other answers varied from 60 to "75 years or older." Only six per cent said physicians retire before 60. However, rural farm dwellers, people over 55, and professional people, in much larger proportions than the general public, said physicians work their entire lives.

The public's median estimate of their own practioner's work week was 64 hours, with 12½ per cent of this time given to charity work; 63 hours and 12 per cent was the public estimate in general. This was close to the medical profession's own estimate; 62½ hours and 13 per cent charity.

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New and Nonofficial Remedies

American Medical Association's Decision on Trade Names

The A.M.A. Council on Pharmacy and Chemistry has adopted a revision of its principles governing the evaluation of drugs for inclusion in NNR (New Program of Operation for Evaluation of Drugs, *J.A.M.A.* **158,** 1170, July 30, 1955). The revision, effective Jan. 1, 1956, provides for listing names of marketed preparations of drugs in conjunction with individual monographs published in the Council's NNR column and included in the annual NNR. It reads as follows.

"The Council encourages the early adoption of a nonproprietary name for general use in identifying each drug. The Council believes that such names tend to diminish confusion. Each drug evaluated is described by a nonproprietary name; however, the Council recognizes the usefulness of the trademark for the physician who wishes to prescribe, or refer to, some particular brand. Names for marketed preparations of individual drugs of which the Council has knowledge or is informed will be listed alphabetically in conjunction with each published monograph as a matter of information. Names or alterations in names of which the Council was not informed prior to initial publication of a monograph will be included in subsequent editions of NNR upon receipt of such information."

Items Recently Evaluated by the A.M.A. Council on Pharmacy and Chemistry

HEPTABARBITAL—Medomin (Geigy)—5-(1-Cyclohepten-1-yl)-5-ethylbarbituric acid—A comparatively short-acting barbiturate for mild sedation or hypnotic action. Administered orally. For sedation: 50–100 mg. two or three times daily; hypnotic dose, 200–400 mg. before retiring.

MEPHENTERMINE—Wyamine (Wyeth)—N,α,α-Trimethylphenethylamine—A sympathomimetic amine vasoconstrictor, which is applied to the nasal mucosa by means of an inhaler containing 200 mg. of mephentermine.

MEPHENTERMINE SULFATE—Wyamine Sulfate (Wyeth)—The soluble sulfate of the sympathomimetic amine vasoconstrictor is applied topically to the nasal mucosa as a 5% solution in normal saline, two or three drops in each nostril every 4 hours or as required to temporarily relieve nasal congestion.

NYLIDRIN HYDROCHLORIDE—Arlidin (Arlingon-Funk)—1-(*p*-Hydroxyphenyl)-2-(1-methyl-3-phenylpropylamino) propanol HCl—An epinephrine-ephedrine type of compound that functions as a peripheral vasodilator, acting particularly on the small arteries and arterioles of skeletal muscle. It is indicated in vascular disorders of the extremities that may be benefited as the result of increased blood flow such as intermittent claudication and Raynaud's disease and as an adjunct to other measures in severe forms of peripheral vascular disease such as diabetic vascular disease, thrombophlebitis, thromoboangiitis obliterans, ischemic ulcers, and endarteritis obliterans. Contraindicated in acute coronary thrombosis. The initial adult dosage is 6 mg. orally three times daily, increased to four to six times daily, depending upon clinical response and individual tolerance. If side effects develop and persist, reduce the dose to 3 mg. three times daily or discontinue temporarily then resume with lower doses.

RESERPINE—Crystoserpine (Dorsey)—**Eskaserp** (SK & F)—**Rau-sed** (Squibb)—**Reserpoid** (Upjohn)—**Roxinoid** (Merck, S & D)—**Sandril** (Lilly)—**Serfin** (Parke, Davis)—**Serolfia** (Ascher)—**Serpanray** (Panray)—**Serpasil** (Ciba)—**Serpate** (Vale)—**Serpen** (Haag)—**Serpiloid** (Riker)—**Serpine** (Pitman-Moore)—An ester alkaloid isolated from the root of certain species of Rauwolfia, reserpine is one of the most potent of the Rauwolfia alkaloids which exhibit a sedative action and antihypertensive effect accompanied by bradycardia. It is useful chiefly for its tranquilizing sedative action. Reserpine is administered orally and by intramuscular or intravenous injection. The usual oral dosage for adults in the treatment of mild, labile hypertension is 0.25 to 1 mg. daily in two or three divided doses. In some cases as little as 0.05 mg. or as much as 1.5 mg. daily may be required. As an adjunct to more potent hypotensive agents in severe hypertension, 0.25 to 0.5 mg. daily is usually adequate. In anxiety or tension psychoneuroses, the daily dosage is 0.5 to 2 mg. In disturbed psychotics an oral dosage of 3 to 5 mg. daily is usually employed

in conjunction with intramuscular injection of 5 to 10 mg. daily, depending on the response to the drug.

SODIUM LEVOTHYROXINE.—Sodium Synthroid (Travenol).—The sodium salt of the levo isomer of thyroxine exhibits approximately twice the activity of the racemic form, 0.1 mg. producing the equivalent clinical effect of 30–60 mg. of thyroid U.S.P. in replacement therapy. Sodium levothyroxine is administered orally in initial adult dosage of 0.05 to 0.1 mg. Patient response should serve to indicate when increases of 0.05–0.1 mg. in the daily dose should be made in 1- to 3-week periods until proper metabolic balance is obtained. Initial dose for children should not exceed 0.05 mg. daily. Effects of overdosage may begin after 4–5 days but may not become apparent for 1–3 weeks. If overdosage is noted, stop medication for 2–6 days, then resume with smaller dose.

NNR Supplemental Statements by A.M.A. Council on Pharmacy and Chemistry

◆ **Dermatological Preparations of Antibiotics.** The Council on Pharmacy and Chemistry recently reopened its evaluation of dermatological forms of the newer antibiotics in relation to the question of local sensitivity reactions on the basis of further experience as indicated by interested manufacturers and the opinions obtained from consultants in dermatology. The data from manufacturers as well as the experience of 11 leading dermatologists revealed that the continued topical use on the skin of an ointment or cream containing 10 mg. per Gm. of erythromycin, 1% chloramphenicol, or 3% chlortetracycline HCl, oxytetracycline HCl, or tetracycline HCl was associated with a relatively low index of sensitivity reactions, which apparently is somewhere between that of the bacitracin-neomycin-polymyxin group and the penicillin-streptomycin group. In some instances sensitization could be traced to the vehicle rather than the antibiotic. The consultants also agreed, however, that promiscuous use of erythromycin and the broad spectrum antibiotics for topical treatment of pyogenic skin infections should be avoided and often was not required in view of the topical effectiveness of other antibiotics less frequently employed for systemic infections. Continued topical application increases the possibility of systemic allergic reactions.

The Council voted to recognize the discriminate use of dermatological preparations of chloramphenicol, chlortetracycline HCl, erythromycin, oxytetracycline HCl, and tetracycline HCl for the topical treatment of pyogenic infections of the skin and to expand the NNR monographs on these antibiotics accordingly.

◆ **Hexachlorophene Limitation.** Evidence for prevention or treatment of miliaria, ammoniacal dermatitis, seborrheic dermatitis and pyogenic skin infections (carbuncles, furuncles, impetigo) by use of hexachlorophene having been reviewed and found based on poorly controlled experiments and to be too meager, the AMA Council on Pharmacy and Chemistry has revised the NNR monograph on hexachlorophene to limit its use to soaps and detergents for preoperative disinfection of the normal skin.

◆ **Lidocaine Hydrochloride Use Expanded.** Additional uses of lidocaine HCl for continuous caudal, peridural, and spinal anesthesia are now recognized in the revised NNR monograph. Drowsiness frequently observed after the use of the agent without epinephrine in block or regional anesthesia is indicative of a central depressant action, and undesirable symptoms and warning of overdosage to be avoided include hypotension, pallor, sweating, nausea, vomiting, and muscular twitching.

◆ **Methoxamine Hydrochloride in Myocardial Shock.** The Council has expanded the NNR monograph on methoxamine HCl to recognize its use as an adjunct in the management of myocardial shock. An initial injection (i.m.) of 15 mg. may be given followed by slow intravenous infusion of a solution containing 35 mg. per 250 cc. of 5% dextrose. The rate of flow should be carefully adjusted and administration closely supervised so that the drug is gradually slowed and discontinued as soon as the patient no longer shows clinical evidence of shock.

◆ **Methscopolamine Bromide, Parenteral.** Clinical observations on the parenteral injection of methscopolamine bromide were found adequate to permit expansion of the NNR monograph of the drug to include its parenteral use. Usually effective dosage ranged from 0.25 to 1 mg. (0.25 to 1 cc. of a solution containing 1 mg./cc.) injected subcutaneously or intramuscularly every 6 to 8 hours until acute symptoms of peptic ulcer are brought under control or oral medication becomes feasible.

2. Venice, 1276

Tools of the Apothecary

2. PHARMACEUTICAL BALANCES

*by George Griffenhagen**

3. Amsterdam, 16

Weighing probably had its origin at the dawn of civilization when primitive man balanced one object against another in his hands. The equal-arm balance was in use in Egypt as early as 1600 B.C., and judging from the *Papyrus Ebers* (1550 B.C.) the balance was undoubtedly employed for weighing drugs at that time. One of the earliest hand balances extant is preserved in the Science Museum, London. This Egyptian balance dating from 1400 B.C. consists of a 30 cm. wooden beam with a hole pierced in the center for the central suspension, and a pair of copper scale pans measuring 7.4 cm. in diameter. The word balance is derived from the Latin "bilanx" meaning two dishes or plates.

The unequal arm balance or "steelyard" is said to have originated with the Etruscans. The Romans called it "statera," the name "steelyard" being a corruption of the German "Stal Hof" (sample courtyard) which was the place where the official weighings were made during the 11th to 13th centuries. See Fig. 1.

Following the decline of the Roman empire, the evolution of the balance practically came to a standstill until the 18th century. Examples of the hand balance employed by the apothecary from the 13th century (Fig. 2) to the 17th century (Fig. 3) show little change. Probably the greatest single incentive to improve the balance was the increasing interest in the study of quantitative chemistry.

The majority of prescription balances used in pharmacies until the 18th century appear to have been coin and gold scales. See Fig. 4, 5. However, judging from a hand balance preserved in the Wellcome Medical Historical Museum in London, there were balance makers who were producing special apothecaries' balances as early as the 17th century. "Henry Neale at ye End of St. Bartholomew Lane near the Royall" (London) was making special apothecaries' balances in 1695. An illustrated account of 18th century French balance makers is to be found in Diderot's encyclopedia (1751–1765).

Among the earliest pharmaceutical balance makers in this country were John Wilbank (who was producing balances of "superior workmanship and construction" for George Carpenter, wholesale druggist of Philadelphia in 1834); James P. Duffey (who according to Procter in 1849 was producing "very excellent balances... for the use of the apothecary"); and Henry Troemner (a German locksmith who settled in Philadelphia in 1838 and began making pharmaceutical balances in 1840). See Fig. 6.

Until 1850 the hand balance was most commonly employed by the apothecary. Procter reported in 1849, "The standard balance (one suspended from a fixed pillar) is not so convenient for dispensing as that which is supported in the hand....The hand balance is therefore used in all establishments where there is much dispensing business." Parrish added in 1856, "These are usually imported from England, France, or Germany. They come in boxes of wood or tin, and have the advantage of being much more portable." See Fig. 4.

The counter box balance first made its appearance in pharmacies in the 1850's, having been introduced from France. They were known as the Beranger French Balance and were made by Messrs. Catenot, Beranger and Company of Lyons, France. Henry Troemner began the manufacture of similar counter box balances based on a U. S. patent issued to C. E. Hoffman of Jersey City, N.J., in 1866. See Fig. 7.

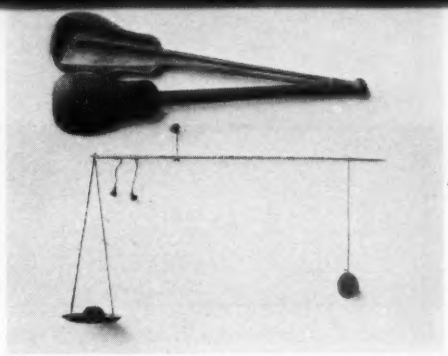
The principle of the torsion balance was invented by Charles Coulomb of France (1736–1806) for measuring the force of electric and magnetic attraction. Experiments were conducted at the University of Göttingen in an attempt to utilize a twisting wire in place of a pivot in commercial balances, but without success. It remained for Frederick A. Roeder of the University of Cincinnati and Alfred Springer to perfect the torsion principal and adapt it to the

* Acting Curator, Division of Medicine, Smithsonian Institution, and Consultant the A.PH.A. Museum.

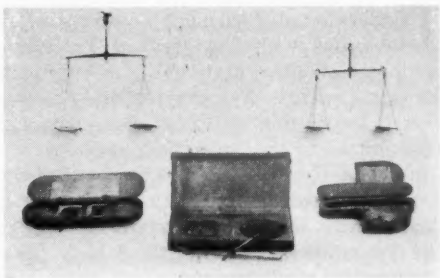
prescription balance. Roeder obtained a U.S. patent on his torsion balance in 1882, and Springer began manufacturing them soon thereafter. See Fig. 8.

Today, according to Goldstein and Mattocks, "recognition of pharmacy as a profession hangs in the balance." Definitions of the standards established by the National Bureau of Standards and methods of testing prescription balances are presented in detail by Goldstein and Mattocks in THIS JOURNAL. [Editor's note: Reprints are still available at 20 cents each.]

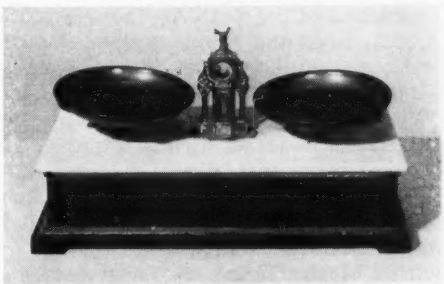
The Class A prescription balance offered pharmacists today generally possesses a sensitivity of $^1/_{32}$ grain (2 mg.) and a total capacity of 120 grams (4 oz.). Henry Troemner of Philadelphia, Pa., describes their "all-glass model No. 540" prescription balance as possessing 3 inch stainless steel pans, a "genuine light mahogany wood case," $15^1/_2$ x $7^1/_2$ x $7^1/_2$ inches, and agate bearings with all other metal parts chromium plated. The Torsion Balance Company describes their model Rx-1 prescription balances as possessing $3^1/_8$ inch stainless steel pans, a metal case with "special scratch resistant, hard, gray finish," $11^1/_2$ x 6 x $6^5/_8$ inches, and torsion bands made with a corrosive-resistant alloy.



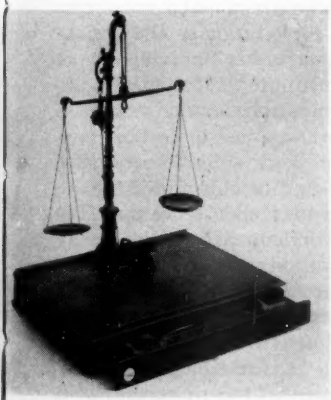
1. Dotchin, steelyard, or so-called "Chinese opium scales." Courtesy of the Smithsonian Institution.

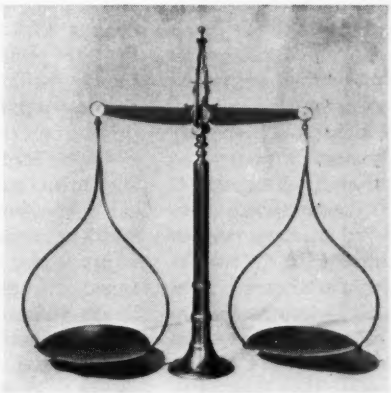


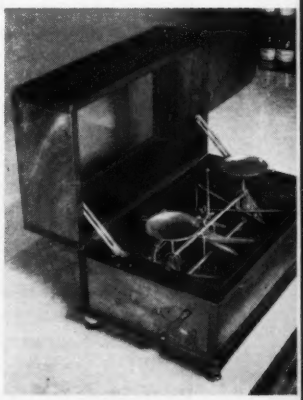
4. French hand balances (l.), 18th century; (ctr.), French, and (r.) domestic balances, 19th century.



7. Troemner box counter balance, Hoffman's patent, 1866. AMERICAN PHARMACEUTICAL ASSOCIATION Museum.







(L. to r.) Coin and gold balance (5.), 18th century; from Smithsonian Institution. Troemner brass counter balance (6.), 1845, A.PH.A. Museum. First torsion balance (8.), made in 1882. Courtesy of P.C.P.&S. Museum.

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Relations Between Pharmacy and Medicine

THE National Pharmacy Committee on Relations with the Medical Profession composed of representatives of the AMERICAN PHARMACEUTICAL ASSOCIATION and the National Association of Retail Druggists has transmitted to the Judicial Council and the Council on Constitution and By-Laws of the American Medical Association a statement dealing with the effect of recent changes in the Principles of Ethics of the A.M.A. upon the practice of pharmacy.

This statement was submitted in response to a suggestion from the Pharmacy Liaison Committee of the Board of Trustees of the A.M.A. when the representatives of pharmacy and medicine met in Chicago last January to discuss problems of mutual interest to the two professions. The full text of the statement transmitted to the American Medical Association follows:

"When the National Pharmacy Committee on Relations with the Medical Profession met with the Pharmacy Liaison Committee of the Board of Trustees of the American Medical Association on January 5, 1956, to discuss matters of mutual interest, it was natural that basic and fundamental concepts of the relations between medicine and pharmacy should enter into the deliberations.

"This led to the discussion of recent changes in the wording of the Principles of Ethics of the A.M.A. which have been very disturbing to the profession of pharmacy. There was a frank and friendly discussion of the situation and the two committees came to the same conclusions which have been so well expressed, independently, in the supplementary report of the Judicial Council of the A.M.A. to the House of Delegates by Dr. Homer L. Pearson at Boston, last November.

"While we were reassured by the Committee of the Board of Trustees that there is no intention on the part of the leaders of the American Medical Association to foster any encroachment on the prerogatives of the profession of pharmacy, it is quite clear that there are in both professions today some members who are attempting to change the wording of accepted principles of ethics in order to justify actions and procedures which are not in keeping with these principles.

"At the conclusion of the discussions on January 6, it was indicated by the representatives of American medicine that a statement by the representatives of American pharmacy, setting forth their views on the effect of changes in the wording or interpretation of the Principles of Ethics of the American Medical Association would be welcome. Accordingly, we now offer the following points for your consideration:

"1. Medicine and pharmacy have worked so closely together over hundreds of years and are so closely associated in the minds of the public, that any disagreement or misunderstanding with respect to their functional relationship would be detrimental to the public interest as well as to the interest of the respective professions.

"2. Editorial comment in the lay press and feature stories in the popular magazines dealing with the exploitation of the patient by the professions either individually or jointly will contribute substantially to shaking public confidence in the system of private enterprise as applied to medical care.

"3. There is no good substitute for such statements as, 'the prime object of the medical profession is to render service to humanity; reward or financial gain is a subordinate consideration'; 'the ethical physician, engaged in the practice of medicine, limits the sources of his income received from professional activities to services rendered the patient'; 'it is unethical for a physician to participate in the ownership of a drugstore in his medical practice area unless adequate drugstore facilities are otherwise

unavailable.' These statements have unfortunately been either discarded or so modified by recent actions of the House of Delegates as to shake the confidence of the pharmaceutical profession and the public in the basic attitude of the medical profession toward its professed Principles of Ethics.

"4. The adoption, as a principle, that 'it is not unethical for a physician to prescribe or supply drugs, remedies, or appliances as long as there is no exploitation of the patient,' could be, and is, interpreted in some quarters as an invitation to the profession of medicine to embark upon an effort to eliminate the pharmacist as a dispenser of drugs.

"5. We respectfully submit that the dangers which flow from the encouragement of those who would seek to have the physician relieved of the basic responsibility to 'recognize and promote the practice of pharmacy as a profession' as provided in Chapter VIII of the 'Principles of Ethics' of the A.M.A. are so great as to warrant the most careful consideration on the part of your Council.

"6. It would be most unfortunate if even small segments of the medical and pharmaceutical profession were pitted against each other in open warfare against real or fancied grievances growing out of economic encroachments fostered by changes in the wording of ethical concepts. The avoidance of such a situation is the responsibility of both professions and we pledge our best efforts in this direction. Knowing how great an influence is wielded by your Council over the determination of what is in the best interest of medical practice and the public health we respectfully request that you give these observations your most careful and friendly consideration."

New Official Drugs

IT IS well known that the Monographs of the U.S.P. and N.F., because of the legal significance of these official compendia, do not supply as much information as pharmacists are frequently called upon to give with respect to chemistry, pharmacology, therapeutic use, dosage and availability of these drugs.

To supply additional information along these lines we are pleased to publish in this issue of the JOURNAL an article by Professor W. L. Weingold which supplies pertinent information on all of the official drugs which appear in the U.S.P. XV for the first time.

Included in the information supplied are data on proprietary or trade names and sources of supply to the extent that this information has been readily available. No claim is made by the author or by the AMERICAN PHARMACEUTICAL ASSOCIATION that the information concerning sources and synonyms is complete, and the inclusion or omission of data in this category is without prejudice and with full cognizance of the fact that in the preparation of general information of this character it is frequently necessary to make arbitrary decisions as to where to draw the line on the extent of information furnished.

The responsibility for these decisions in the article published is clearly that of the author and we believe that unusual competence has been displayed in presenting in this article factual data which will enable the practicing pharmacist to supplement the information contained in the U.S.P. XV with respect to new drugs. It is expected of course that practicing pharmacists will have access to other ready references on these drugs and to the literature and references furnished by manufacturers and distributors of these drugs. There is, however, an advantage in having listed in one place a summary of information such as is presented in this article. A similar article by the same author dealing with new National Formulary X drugs will follow in an early issue.

A Revealing Survey

MR. GEORGE BUGBEE, president of the Health Information Foundation, in addressing the recent Public Health Forum sponsored by the Brooklyn College of Pharmacy Alumni Association, presented the results of a survey of the pharmacist as a professional man conducted by the National Opinion Research Center of the University of Chicago.

In a future issue of THIS JOURNAL, we hope to give a more detailed report on this survey. It is of immediate interest, however, to note the summary of this survey as given by Mr. Bugbee on this occasion. The summary follows:

"There seem very definitely to be professional responsibilities in the pharmacist's

(Continued on page 200)

THE NEW OFFICIAL DR

by William L. Weingold*

NOWHERE does the rapid progress in medicine reveal its imprint upon pharmacy more plainly than in the successive revisions of the U.S. Pharmacopeia and National Formulary. Even with the change from the decennial to a quinquennial basis, each new revision presents a formidable challenge to those who must familiarize themselves thoroughly with the official drugs. The new admissions to U.S.P. XV constitute almost one-third of the total list and represent the entire range of therapy of human disease. Pharmacists and students are hard pressed to obtain some information on these new articles which perforce cannot be given in the official texts. It is the purpose of this series of articles to discuss, within severe limitations on space, the salient pharmacologic attributes of the new drugs, the recommended dosages, their major therapeutic uses, and to present *in some measure* the proprietary and/or trade names under which they are available.

The names of many firms supplying the official forms of the new U.S.P. drugs are listed in the text. Where numerous firms handle the article, it is assumed that the pharmacist will have little difficulty in locating a convenient source of the drug either under its proprietary or trade name or the official name. This listing reflects the information given in the following reference sources: *New and Nonofficial Remedies*, *Modern Drug Encyclopedia*, *Facts and Comparisons*, the *Red Book* of the Topics Publishing Company, and the *Blue Book* of the *American Druggist*. To conserve space, some liberties have been taken with the full corporate title of the firms listed where an abbreviation is believed to be reasonably clear.

In the case of the antibiotics there is such a multiplicity of proprietary and/or trade names and dosage forms that it seems preferable to refer the reader to the information of this kind given in *The Manual of Antibiotics*, distributed by the AMERICAN PHARMACEUTICAL ASSOCIATION.

The wide range of available dosage forms of antibiotics doubtless is confusing to many pharmacists and physicians alike. The unstable nature of most antibiotics precludes their distribution in liquid vehicles. The need for the liquid dosage forms is met by providing the pharmacist with stable dry forms to which he adds a suitable solvent immediately prior to dispensing. To designate differences of strength in the final product, such terms as "Pediatric Drops," "Oral Drops," "Oral Suspension," etc., are used. Generally, in the case of the broad spectrum antibiotics, dosage forms are available to supply the following concentrations: 125 mg./5 ml., 250 mg./5 ml. and 100 mg./ml.

Of 242 new admissions to the U.S.P. XV, 35 were already official by virtue of their inclusion in the ninth edition of the National Formulary. Such cases are designated by the parenthetic expression [*N.F. IX*] following the title heading. Except as noted, the respective U.S.P. XV monographs are substantially the same as the N.F. IX monographs.

Many antihistaminics may be placed in a general class from a chemical standpoint as follows: ethylenediamines, to which group most official antihistaminics belong; ethanolamines which include Doxylamine Succinate, the antinauseant Dimenhydrinate, and Diphenhydramine Hydrochloride of U.S.P. XIV; and miscellaneous one-of-a-kind antihistaminics represented by four new U.S.P. XV drugs. The classification of each is indicated in the text under each title.

An attempt has been made to compare the antihistaminics as to their relative incidence of side effects. Three general classifications, low, intermediate, and marked, are used to indicate roughly how the antihistaminics compare in this respect.

As listed on page *lii* of U.S.P. XV, there are 24 cases of a title change in carrying over the items concerned from U.S.P. XIV. Two of these changes deserve especial mention from the standpoint of the general policy involved. The first is Sterile Epinephrine Suspension, which is a new title intended to denote that the product (listed in U.S.P. XIV as Epinephrine in Oil Injection) is a *suspension* as opposed to a *solution*. Except for the two insulin products, Globin Zinc Insulin Injection and Protamine Zinc Insulin Injection, and Bismuth Subsalicylate Injection, all U.S.P. XV *Injections* are solutions. It is superfluous to have the title indicate that Injections are

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DRUGS / Part I—U.S.P. XV

(Part II—N.F. X to come)

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sterile but not so with the Suspensions, since these may be either sterile or not, depending upon whether their intended use is by intramuscular injection or by oral ingestion.

The second U.S.P. XV title change of general interest is represented by Thiopental Sodium for Injection (which was Sterile Thiopental Sodium in U.S.P. XIV). The new title designates the type of product which is distributed as a sterile powder suitable for the extemporaneous preparation of an injection by the addition of a suitable solvent. Presentation of this dosage form is dictated of course by relative instability of the drug in solution.

Four articles are mentioned in this discussion which are to assume U.S.P. status upon the appearance of the First U.S.P. XV Supplement. These are Chlorpromazine Hydrochloride, Reserpine, Sodium Radio-phosphate (P^{32}) Solution, and Torula Yeast. This Supplement reflects the policy of continuous U.S.P. revision by which new drugs are admitted as promptly as practical after they have received suitable recognition.

ADRENAL CORTEX INJECTION.—This is a sterile solution in alcohol and water for injection containing a mixture of the endocrine principles derived from the cortex of adrenal glands of healthy domestic animals used for food by man. While it contains the mixed steroids of the adrenal gland, including both the glycogen-forming group (e.g., hydrocortisone) and the mineral-corticoids (e.g., the newly isolated aldosterone), it is standardized in terms of its hydrocortisone content. Thus, each ml. exhibits a biological activity equivalent to that of 100 mcg. of U.S.P. Hydrocortisone Reference Standard.*

The Injection is of value in the treatment of Addison's disease and other types of adrenal insufficiency, and prophylactically against temporary adrenal insufficiency. It may also be of value in the treatment of acute stress situations such as severe overwhelming infections (Waterhouse-Friderichsen syndrome) and burns.

Category, Mixed natural adrenocortical hormones; *Usual dose,* Intramuscular and intravenous, 10-ml., repeated as necessary; *Range,* 10 to 100 ml.

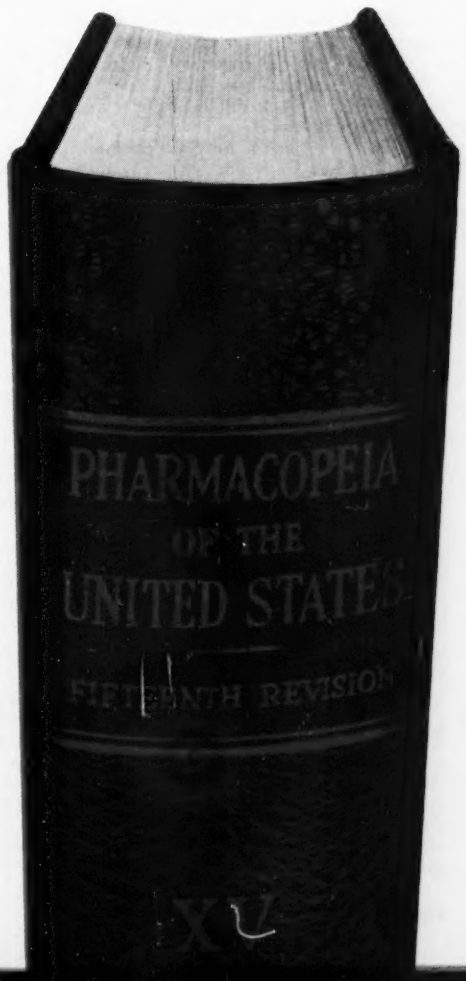
Commercial source, Solution Adrenal Cortex (Armour, Upjohn, Wilson, Siler Medical Corp., E. S. Miller); Eschatin (Parke, Davis); Adrenalex (Darwin).

ALUMINUM.—Aluminum is a very fine, free-flowing silvery powder, free from gritty or discolored particles. It is required for U.S.P. Aluminum Paste.

ALUMINUM PASTE.—This is a product containing 10% aluminum in a base of zinc oxide ointment. Liquid Petrolatum is included as a levigating agent. The product is used after permanent colostomy to prevent irritation of the exposed membranes from the colostomy bag.

Category, Protective; *For external use,* Topically as required.

ALUMINUM CHLORIDE [N.F. IX].—Aluminum Chloride is recognized in the U.S.P. as a local antiperspirant and astringent.



* A pending revision in the rubric specifies U.S.P. Hydrocortisone Reference Standard in place of U.S.P. Hydrocortisone Acetate Reference Standard.

Category, Local antiperspirant, astringent; *For external use*, Topically in 10 to 25 per cent solution.

AMINOSALICYLIC ACID; —TABLETS.—Aminosalicylic Acid (Para-aminosalicylic Acid; PAS), although less potent than the streptomycins, is used to supplement these antibiotics in treating tuberculosis. The combination may postpone the development of bacterial resistance or may act synergistically. Aminosalicylic Acid alone is indicated when bacterial resistance to the streptomycins appears, or if the latter are contra-indicated.

Category, Antibacterial (tuberculostatic); *Usual dose*, 3 Gm. four times a day; *Range*, 2 to 4 Gm.

Commercial source, Pamisyl (Parke, Davis); Para-Pas (Gold Leaf); Parasal (Panray); Propasa (Sharp and Dohme).

AMOBARBITAL [N.F. IX]; **—TABLETS** [N.F. IX].—Amobarbital is a barbiturate of intermediate duration; effects last 6 or 8 hours. It is useful for simple insomnia where sleep comes easily but is disturbed by nocturnal or early morning awakening.

Category, Central depressant; *Usual dose*, 100 mg. once or twice a day; *Range*, 20 to 300 mg.

Commercial source, Amytal Tablets (Lilly).

AMOBARBITAL SODIUM [N.F. IX]; **—CAPSULES** [N.F. IX]; **—STERILE** [N.F. IX].—The sodium salt of amobarbital is pharmacologically equivalent to the free base and has the pharmaceutical advantage of water solubility.

Category. Central depressant; *Usual dose*, Oral, intramuscular and subcutaneous, 100 mg. once or twice a day; *Range*, 20 to 500 mg.

Commercial source, Amytal Sodium Powder, Amytal Sodium Capsules, Amytal Sodium Ampuls (Lilly); Amobarbital Sodium Powder (Lannett).

AMPHETAMINE SULFATE, DEXTRO; —TABLETS.—This is the dextrorotatory isomer of amphetamine sulfate. Dextro Amphetamine Sulfate is indicated for use in depressive states, for control of appetite in cases of obesity and for narcolepsy. It should be used with caution in patients hypersensitive to ephedrine-like compounds, in cases of coronary or cardiovascular disease, and in severe hypertension.

Category, Central stimulant; *Usual dose*, 5 mg. twice a day; *Range*, 2.5 to 5 mg.

Commercial source, Dexedrine Sulfate Tablets, Dexedrine Sulfate Spansules (S.K.F.); d-Amphetasul Tablets (Pitman). A large number of firms supply Dextro Amphetamine Sulfate under its official title.

ANETHOLE [N.F. IX].—This, the active constituent of anise oil, has been adopted from N.F. IX for use as a flavor in Diphenhydramine Hydrochloride Elixir.

ANTAZOLINE HYDROCHLORIDE; —TABLETS.—Antazoline Hydrochloride is a substituted imidazoline. Its antihistamine effect shows an onset of action in 30–60 minutes with a duration of 3–4 hours. It falls into an intermediate group with respect to side-effects; reports show that the side-effects include nausea, drowiness and, rarely, vertigo, headache, dryness of mouth, intestinal upset, and palpitations. It shows little irritation to mucous membranes, a property that is important in the topical use of Antazoline.

Category, Antihistaminic; *Usual dose*, 100 mg. up to four times a day; *Range*, 50 to 100 mg.

Commercial source, Antistine Hydrochloride (Ciba).

ASCORBIC ACID INJECTION.—This represents a change of official title. It was formerly official as Sodium Ascorbate Injection, U.S.P. XIV.

BACITRACIN; —OINTMENT.—Bacitracin is an antibacterial substance produced by the growth of a Gram-positive, spore-forming organism belonging to the *Bacillus licheniformis*. The U.S.P. definition provides for 3 different potency levels grading downward from 50 U.S.P. Units per mg. for parenteral use to 30 U.S.P. Units per mg. for use in ointments. The U.S.P. Unit is defined in terms of the U.S.P. Bacitracin Reference Standard.

Bacitracin is bactericidal against a wide variety of Gram-positive organisms, and certain Gram-negative cocci. It is ineffective against most aerobic Gram-negative bacilli.

The official ointment contains bacitracin (500 Units/Gm.) in an anhydrous white petrolatum base. Liquid Petrolatum is used as a levigating agent.

Category, Antibiotic; *For external use*, Topically as ointment containing 500 Units per Gm.

Commercial source, Bacitracin Ointment (Abbott, Commercial Solvents Corp., Approved Pharmaceutical Corp., Berkeley Drug Co., DuMont Pharmacal Co., Evron, National Drug, Pitman-Moore, Premo, Lilly, Pfizer). Bacitracin in the form of Soluble Tablets (Lilly, Pfizer) and vials of Powder for Injection (Pfizer, Commercial Solvents Corp., Parke, Davis, Upjohn) may be used in preparing the ointment.

BENZENE HEXACHLORIDE, GAMMA.—When applied to the skin, Gamma Benzene Hexachloride (Lindane) acts as a scabicide and pediculocide. It is highly toxic and may be absorbed through the skin. A single application of a 1% solution is usually sufficient, with a second or third application being rare. It is irritating to mucous membranes, so that appropriate warning against accidental contact with the eyes is advisable.

Category, Scabicide; *For external use*, Topically, 1 per cent in ointment or lotion as required.

Commercial source, Kwell Lotion, Kwell Ointment (Commercial Solvents Corp.); Gexane Liquid, Gexane Ointment (Strasenburgh).

BENZETHONIUM CHLORIDE; —SOLUTION.—This synthetic quaternary ammonium compound of the cationic type inhibits the growth and viability of commonly occuring non-sporulating bacteria. As with other cationic agents such as benzalkonium chloride, it is incompatible with soap and other anionic detergents as well as organic matter. It is used as a surface antiseptic for intact skin and mucosa, for irrigation, for presurgical antisepsis, and for cold sterilization of instruments.

Category, Local antibacterial; *For external use*, Topically as a 1:1000 solution to the skin or a 1:5000 solution in the eye or nose.

Commercial source, Phemerol Chloride Solution (Parke, Davis).

BENZOIC AND SALICYLIC ACID OINTMENT [N.F. IX].—This ointment differs both in strength and in base from that which was official in N.F. IX. The new formula calls for 6% Benzoic Acid and 3%

Salicylic Acid in a base of Polyethylene Glycol Ointment. Since the new base is water-removable, nonionic, and allows for more complete release of the medicaments, less is required.

Category, Keratolytic; *For external use,* Topically as required.

BETHANECHOL CHLORIDE; —INJECTION; —TABLETS.—Bethanechol Chloride has pharmacological properties similar to those of methacholine chloride but differs from acetylcholine chloride in that it exhibits little if any ganglion-stimulating action and is not destroyed by cholinesterase. It is less toxic than some other esters of choline, but is also less active. It is useful in treating conditions that are relieved by stimulation of the parasympathetic nervous system. The drug should never be given intravenously or intramuscularly.

Category, Parasympathomimetic; *Usual dose,* Oral, 10 mg. three times a day; subcutaneous, 2.5 mg.; *Range,* Oral, 5 to 30 mg.; subcutaneous, 2.5 to 5 mg.

Commercial source, Urecholine Chloride Solution, Urecholine Chloride Tablets (Sharp and Dohme).

BITHIONOL.—Bithionol is a bacteriostatic agent effective against Gram-positive organisms and retaining its activity in the presence of soap. The water solubility of this compound is low; however, dilute solutions in soaps are possible. Bithionol has, therefore, been incorporated in deodorant soaps for the control of skin bacteria and for the resulting reduction of body odors caused by these bacteria. For use, one part of Bithionol is generally combined with 50 to 100 parts of soap. It has also been used in shampoos, shaving creams, skin lotions and other cosmetics. Care must be taken, however, since solutions tend to darken most metals.

Category, Local anti-infective.

Commercial source, Actamer (Monsanto Chem. Co.); Lorothidol (Hilton-Davis Chem. Co.).

BLOOD, WHOLE HUMAN, CITRATED.—Blood transfusions, which have become such an important life-saving measure, depend upon a ready supply of preserved whole blood. To obtain it, blood is taken from carefully selected donors under rigid aseptic conditions and is handled throughout with utmost care. It must be stored and shipped at a temperature between 4° and 10°, preferably at the lower limit. It must be dispensed in the unopened container in which it was placed by the manufacturer. The expiration date is not more than 21 days after date of bleeding the donor. The product is used as a blood volume replenisher but it has no equal in any of the so-called blood substitutes. It is usually supplied by local blood banks.

Category, Blood-volume replenisher; *Usual dose,* Intravenous, 500 ml.

CACAO SYRUP.—Cacao Syrup (Cocoa Syrup) represents a change in the U.S.P. XIV formula. The new syrup utilizes liquid glucose and glycerin for body and smoothness, as well as to suspend the cacao. Sodium chloride improves the taste, sucrose is a sweetener, vanillin is used as the flavor, and sodium benzoate is used as the preservative. The monograph notes that cacao containing not more than 12% of nonvolatile, ether-soluble extractive "fat" provides a syrup having a minimum tendency to separate. "Breakfast cocoa," which contains over 20% of "fat," is generally unsuitable.

Category, Flavored vehicle.

CALAMINE LOTION.—The formula for Calamine Lotion U.S.P. XV is substantially that of U.S.P. XIII with the amount of bentonite magma reduced with a view to yielding a more freely pouring product that still dries rapidly on the skin. In contrast to the U.S.P. XIV lotion, it is compatible with phenol.

Category, Protective; *For external use,* Topically.

CALAMINE LOTION, PHENOLATED [N.F. IX].—The simple addition of 1% of phenol confers the latter's anesthetic properties on Calamine Lotion, U.S.P. XV.

Category, Protective; *For external use,* Topically.

CALCIUM AMINOSALICYLATE; —TABLETS.—By definition, calcium aminosalicylate may be either the hemihydrate or the terhydrate. Its solutions tend to decompose with darkening. The U.S.P. cautions: "*Prepare solutions of Calcium Aminosalicylate within 24 hours of administration. Under no circumstances use a solution if its color is darker than that of a freshly prepared solution.*"

This product has the same actions and uses as Aminosalicylic Acid and Sodium Aminosalicylate. Its activity equals that of the sodium salt, and it offers the advantage of being suitable for patients on a sodium-restricted diet.

Category, Antibacterial (tuberculostatic). *Usual dose,* 3 Gm. four times a day; *Range,* 2 to 4 Gm.

Commercial source, Pasara Calcium Tablets (Dorsey).

CALCIUM PANTOTHENATE.—This is the calcium salt of the dextrorotatory isomer of pantothenic acid, a vitamin widely distributed in nature but for which the minimum daily requirement has not been established since its need in human nutrition has not been demonstrated. A component of the vitamin B complex and a constituent of coenzyme A, it is essential to chicks for the prevention of dermatitis and to rats for growth and prevention of graying of hair.

Category, Vitamin-B complex vitamin. *Usual dose,* 10 mg.

Commercial source, Powder (Merck). Tablets are available from many sources under the official title.

CALCIUM PANTOTHENATE, RACEMIC—This is a mixture of the calcium salts of the dextrorotatory and levorotatory isomers of pantothenic acid. It is optically inactive. The U.S.P. notes, "*The physiological activity of Racemic Calcium Pantothenate is approximately one-half that of Calcium Pantothenate.*" The racemic form is frequently used in vitamin formulations in quantities sufficient to meet a label claim for calcium pantothenate.

Category, Vitamin-B complex vitamin; *Usual dose,* 20 mg. (equivalent to approximately 10 mg. of dextrorotatory calcium pantothenate).

CHLORAMPHENICOL OPHTHALMIC OINTMENT.—This ointment contains not less than 1 mg. per Gm. of chloramphenicol. It is used for eye infections due to certain Gram-positive and Gram-negative bacteria and rickettsia.

Category, Antibiotic; *For external use,* Topically to lids or conjunctivas as necessary.

Commercial source, Chloromycetin Ophthalmic Ointment (Parke, Davis).

CHLORCYCLIZINE HYDROCHLORIDE; —TABLETS.—Chlorcyclizine Hydrochloride is a substituted piperazine. Its antihistaminic effect begins

in from 15 minutes to 1½ hours, with a duration, of 12 to 24 hours. It falls into the group with a "low" incidence of side-effects. Reports show that the side-effects include mild drowsiness, slight headache, light-headedness, gastrointestinal irritation, and dryness of mucous membranes. Long duration of action with low incidence of side-effects is its most important attribute.

Category, Antihistaminic; *Usual dose*, 50 mg. up to four times a day; *Range*, 25 to 100 mg.

Commercial source, Di-Paralene (Abbott); Perazil (Burroughs-Wellcome).

CHLOROTHEN CITRATE; —TABLETS.—This antihistaminic belongs to the ethylenediamine group and is closely related to methapyrilene. Both embody the thenyl radical and chlorothen is distinguished solely by a chlorine substitution on this group. It is of medium potency, and an incidence of side-effects of about 25% places it in the intermediate group. Drowsiness is the main side-effect.

Category, Antihistaminic; *Usual dose*, 25 mg. up to four times a day; *Range*, 25 to 50 mg.

Commercial source, Tagathen (Lederle).

CHLORPHENIRAMINE MALEATE; —TABLETS.—Chlorpheniramine is probably the most potent antihistaminic available today. It is a propylamine derivative with a chlorine-substitution in a phenyl group which distinguishes it from the closely similar pheniramine maleate, N.F. X. Its onset of action is 15 to 30 minutes but its duration of effect is not long (3 to 4 hours). It falls into the group with a "low" incidence of side-effects, causing mild to severe drowsiness in less than 10% of its users and other reactions such as mild nausea, headache, and skin disorders are occasionally observed.

Category, Antihistaminic; *Uusual dose*, 4 mg. up to four times a day; *Range*, 2 to 8 mg.

Commercial source, Chlor-Trimeton Maleate (Schering); Teldrin Spansule (S.K.F.).

CHLORPROMAZINE HYDROCHLORIDE.—Chlorpromazine Hydrochloride is a synthetic drug which has been used widely in Europe since 1951. It suppresses nausea and vomiting, relieves certain neurotic conditions and psychotic states, and induces an unusual type of sedation giving the patient a "feeling of well-being," often described as a "tranquilizing effect." Due to its selective depressant effect on certain neural centers it has been shown that it stops severe and persistent hiccoughing.

It has been demonstrated that the product exerts effects on both the central and autonomic nervous systems, the cardiovascular system, and the skeletal-muscular system. Thus, potential uses of the drug are widespread.

Category, Central depressant, tranquilizer; *Usual dose*, Oral, 100 mg. daily in divided doses; intramuscular or intravenous, 25 mg. daily; *Range*, oral, 10 to 1000 mg. daily; intramuscular or intravenous, 25 to 1000 mg. daily.

Commercial source, Thorazine (S.K.F.).

CHLORTETRACYCLINE HYDROCHLORIDE; —CAPSULES; —FOR INJECTION; —OPHTHALMIC.—The first two items represent only a change of official title from Aureomycin Hydrochloride a broad spectrum antibiotic recognized in U.S.P. XIV. Both the injection and ophthalmic product are new in U.S.P. XV.

The injection is a sterile, dry mixture of chlortetracycline hydrochloride with a suitable buffer, usually consisting of an amino acid. The ophthalmic preparation is a sterile, dry mixture of chlortetracycline hydrochloride with a buffer. It may contain suitable bacteriostatic agents and diluents.

Category, Antibiotic; antiprotozoan; *Usual dose*, 250 mg. four times a day; *Range*, 50 mg. to 1 Gm.; *For external use*, Topically in solution to lids or conjunctivas as required.

Commercial source, Aureomycin Hydrochloride Intravenous, Aureomycin Hydrochloride Ophthalmic (Lederle).

CHOLERA VACCINE [N.F. IX].—The U.S.P. monograph is a little more specific than that which appeared in N.F. IX in respect to the source as well as the minimum antigenic value of the vaccine.

Category, Specific immunizing agent; *Usual dose*, Subcutaneous, 0.5 ml. and then, at intervals of 7 to 10 days, 0.5 ml. and 1 ml., for a total of 3 injections.

Commercial source, Cholera Vaccine (Lederle, Lilly, Wyeth).

COAL TAR OINTMENT.—This ointment differs as to strength in comparison with the U.S.P. XIV ointment and contains 0.5% polysorbate 80. The former product contained 5% coal tar while the new product contains only 3% coal tar. The polysorbate 80 (Tween 80) produces a water-removable base and also enhances absorption of the coal tar, so that the formula calls for less of the active ingredient. While the term "local irritant" was chosen for the *Category*, actually dermatologists look upon the product as a non-specific "stimulant" with beneficial effects in a wide range of skin conditions.

Category, Local irritant.

COAL TAR SOLUTION [N.F. IX].—This product differs in composition from that which was official in N.F. IX. In the new product, the quillaja has been replaced by polysorbate 80 (Tween 80), which results in better dispersions of the coal tar in products where the solution is used. It also makes the solution more easily washed from the skin. As in the case of Coal Tar Ointment, the *Category* is misleading (see above).

Category, Local irritant.

CORTICOTROPIN INJECTION.—Corticotropin Injection (ACTH Injection; Adrenocorticotropin Injection; Corticotrophin Injection) is a sterile preparation of the principle or principles derived from the anterior lobe of the pituitary gland, which stimulate the normal function of the adrenal cortex. The intravenous form is to be distinguished from that which may be given intramuscularly.

This is an essential pituitary hormone which stimulates the adrenal cortex physiologically to secrete its full spectrum of cortical hormones. It produces dramatic results in the treatment of collagen or connective tissue diseases, hypersensitivities, and many acute inflammatory conditions. Since corticotropin is rapidly utilized by the body its effect rarely exceeds 6 hours. For this reason it is necessary to administer it repeatedly or in repository form.

Category, Anterior pituitary hormone. *Usual dose*, Intramuscular, 10 U.S.P. Units four times a day; Intravenous, 10 U.S.P. Units, highly diluted, infused over an 8-hour period; *Range*, Intramuscular and intravenous, 10 to 100 U.S.P. Units daily.

Commercial source, Lyophilized Acthar (Armour); Lyophilized Corticotropin (Upjohn); Corticotropin Solution (Wilson); ACTH (Invenex, National,

Parke Davis, Testagar); Actrope (United Labs.); Solacthyl (Squibb); Cortrophin (Organon.)

CORTICOTROPIN INJECTION, REPOSITORY.—Repository Corticotropin Injection (Corticotropin Gel) is corticotropin prepared in a vehicle which favors prolongation of the therapeutic effect. By administering corticotropin in this form the total daily dosage may be given in one dose.

Category, Anterior pituitary hormone; *Usual dose*, Intramuscular, 10 U.S.P. Units daily; *Range*, 10 to 100 U.S.P. Units.

Commercial source, Purified ACTH Gel (National); ACTH gel (Testagar); Depo-ACTH (Upjohn); Corticotropin Gel (Organon); Purified Corticotropin Gel (Wilson); El-Acorto Gel (Breon); H.P. Acthar Gel (Armour).

CORTISONE ACETATE; —SUSPENSION, STERILE; —OPHTHALMIC SUSPENSION; —TABLETS.—Sterile Cortisone Acetate Suspension is a suspension in an aqueous medium suitable for injection. The Ophthalmic Suspension is also in a sterile aqueous medium with a suitable bacteriostatic agent.

Cortisone is an 11-keto steroid which was isolated from the adrenal cortex as "Compound E" and is now prepared synthetically as the acetate. Cortisone acetate influences carbohydrate, protein and fat metabolism, promoting gluconeogenesis. To a lesser degree it influences electrolyte balance; however, large doses may cause profound changes. It is capable of maintaining life in adrenal insufficiency. In addition to the metabolic effects, it controls many inflammatory conditions, such as collagen and eye diseases, and various allergic diseases.

The purposes of the three dosage forms provided are obvious.

Category, Adrenocortical hormone; *Usual dose*, Oral, 25 mg. four times a day; intramuscular, 100 mg. daily; *Range*, Oral, 2.5 to 75 mg.; intramuscular, 5 to 300 mg.; *For external use*, Topically as a 0.5 to 2.5 per cent suspension to conjunctiva.

Commercial source, Cortisone Acetate Tablets, Cortisone Acetate Injection (Upjohn); Cortone Acetate Tablets, Cortone Acetate Injection, Cortone Acetate Ophthalmic Suspension (Sharp & Dohme); Cortogen Acetate Tablets, Cortogen Acetate Injection, Cortogen Acetate Ophthalmic Suspension (Schering).

CYANOCOBALAMIN; —INJECTION.—These two titles are new but the drugs were formerly official as Vitamin B_{12} and Vitamin B_{12} Injection. The chemical nature of the vitamin suggests the adoption of the more informative name Cyanocobalamin, which, when given in minute quantities by injection or orally with a form of intrinsic factor, is the specific treatment for pernicious anemia.

Category, Hematopoietic; *Usual dose*, Intramuscular, 1 mcg. daily, preferably administered in amounts of 10 or 15 mcg. at appropriate intervals; *Range*, 1 to 20 mcg.

Commercial source, It is available under many trade names and under its official title.

DECAVITAMIN CAPSULES; —TABLETS.—Decavitamin Capsules (or tablets) contain in each capsule (or tablet) 1.5 mg. (5000 U.S.P. Units) of vitamin A, 10 mcg. (400 U.S.P. Units) of vitamin D, 75 mg. of ascorbic acid, 5 mg. of calcium pantothenate or its equivalent as racemic calcium pantothenate, 2 mcg. of cyanocobalamin, 0.25 mg. of folic acid, 20 mg. of nicotinamide, 2 mg. of pyridoxine hydrochloride, 3 mg. of riboflavin, and 2 mg. of thiamine hydrochloride or thiamine mononitrate.

This formula is very similar to the standard maintenance vitamin capsule recommended by the Committee on Therapeutic Nutrition of the Food and Nutrition Board of the National Research Council. While there is criticism on medical grounds of any multivitamin preparation, this formula is recommended for use in mild physiologic or pathologic stresses, for growing children and adolescents, for convalescents in later stages, and for patients with inadequate or irregular diets or poor dietary habits.

Usual dose, 1 capsule or 1 tablet daily.

DEHYDROCHOLIC ACID; —TABLETS.—Dehydrocholic Acid effectively and rapidly increases the volume of fluid bile secreted by the liver without causing emptying of the gall bladder. It shows a hydrocholeretic action but does not act as a cholagogue. It is used for various hepatic and biliary tract diseases.

Category, Choleretic; *Usual dose*, 500 mg. three times a day; *Range*, 250 to 500 mg.

Commercial source, Cholan DH (Maltbie); Dilabil (Breon); Dehychol (Rexall); Decholin (Ames); Procholon (Squibb). It is also available from many sources under its official title.

DESLANOSIDE; —INJECTION.—Chemically, Deslanoside is desacetyl lanatoside C. The injection, a hydro-alcoholic solution which may contain glycerin, is ready for injection without further dilution. Deslanoside acts exactly like lanatoside C, but it is more stable in solution.

Category, Cardiotonic; *Usual dose*, Intravenous—initial, 1.6 mg., maintenance, 0.4 mg.; *Range*, Initial, 1.2 to 1.6 mg., maintenance, 0.2 to 0.6 mg.

Commercial source, Cedilanid-D Ampules (Sandoz).

DESOXYCORTICOSTERONE ACETATE INJECTION.—Desoxycorticosterone Acetate and Desoxycorticosterone Acetate Pellets were recognized in U.S.P. XIV. The Injection is newly listed. Due to its insolubility in water, it is necessary to use an oil as the vehicle.

The product is highly selective in its physiological activity. It favors retention of both the sodium ion and water and also favors an increase in the excretion of potassium through its action on the kidney. It has no direct effect on protein or carbohydrate metabolism in man. It has also been used for conditions of adrenal insufficiency such as Addison's disease, generally with sodium chloride as a supplement.

Category, Adrenocortical hormone; *Usual dose*, Intramuscular—5 mg. daily; *Range*, Intramuscular—2 to 5 mg.

Commercial source, Cortate (Schering); Doca (Organon); Decortin (Schieffelin); Decosterone (Barry); Percorten (Ciba).

DIBUCAINE HYDROCHLORIDE [N.F. IX]; **—INJECTION.**—Dibucaine Hydrochloride is a local anesthetic that produces the same effects as the alkaloid cocaine when applied to mucous surfaces; like procaine or cocaine, the action is prolonged when injected. It is about five times as toxic as cocaine

when injected intravenously into animals but it is many times more active than procaine hydrochloride.

Category, Local anesthetic; *Usual dose*, Infiltration, 1 to 50 ml. of 1 in 1000 solution; *Range*, 1 to 50 ml.

Commercial source, Nupercaine Hydrochloride (Ciba).

DIENESTROL; —TABLETS.—Dienestrol is a nonsteroid synthetic estrogen which is orally effective. While somewhat less potent, it gives rise to fewer side reactions than diethylstilbestrol and related synthetic estrogens.

Category, Estrogen; *Usual dose*, 0.5 mg. daily; *Range*, 0.1 to 1.5 mg.

Commercial source, Available from many sources under the official title.

DIETHYLCARBAMAZINE CITRATE; —TABLETS.—Diethylcarbamazine Citrate is a new organic chemotherapeutic compound which is not a heavy metals complex. It is active against certain parasites, being used in the treatment of several tropical diseases.

Category, Anthelmintic, antifilarial; *Usual dose*, 2 mg. per Kg. three times daily for 7 to 21 days.

Commercial source, Hetrazan Tablets (Lederle).

DIHYDROSTREPTOMYCIN SULFATE; —INJECTION.—The U.S.P. XIV monograph on Dihydrostreptomycin was unspecific as to the salt but stated that the base was unavailable. In U.S.P. XV, the entire monograph is devoted to the sulfate which now is the form most widely used. It is used in selected cases of tuberculosis, as well as for other susceptible Gram-positive and Gram-negative organisms.

Category, Antibiotic; pharmaceutic necessity for Procaine Penicillin G and Dihydrostreptomycin Sulfate for Aqueous Injection, and for Streptoduocin.

Usual dose, Intramuscular, 500 mg. of base daily; *Range*, 500 mg. to 1 Gm.

Commercial source, It is available from many manufacturers in vials containing 1 or 5 Gm. of powder.

DIIODOHYDROXYQUIN; —TABLETS.—These monographs represent a change of official title, being known as Diiodohydroxyquinoline in U.S.P. XIV.

Category, Antiprotozoan; *Usual dose*, 650 mg. three times a day for 20 days; *Range*, 650 mg. to 1 Gm.

Commercial source, Diodoquin Tablets (Searle).

DIMENHYDRINATE; —TABLETS.—This is a chlorotheophylline salt of the antihistaminic diphenhydramine. Its actions are similar to the antihistamine compounds in its ability to produce mild sedation of the central nervous system. It is useful in relieving the nausea, vomiting and dizziness of motion sickness and of other conditions where these symptoms occur as in pregnancy.

Category, Antihistaminic (antinauseant); *Usual dose*, 50 mg. four times a day; *Range*, 50 to 100 mg.

Commercial source, Dramamine Tablets (Searle).

DIOCTYL SODIUM SULFOSUCCINATE [N.F. IX].—Dioctyl Sodium Sulfosuccinate has been official in the N.F. for many years. It is a surface-active agent which is useful as a surface tension reducer and as a wetting agent. It has been used in many cosmetic formulations. It was originally admitted as a pharmaceutical necessity for the new formulation for Calamine Lotion. When the latter's formula was changed, the monograph for Dioctyl Sodium Sulfosuccinate was allowed to remain since it is very useful in its own right.

The official *category* is erroneously given as pharmaceutical necessity for Calamine Lotion. Properly, it should probably be surface-active agent.

Commercial source, Aerosol OT (American Cyanamid & Chem. Corp.).

DIPHENHYDRAMINE HYDROCHLORIDE ELIXIR.—Diphenhydramine Hydrochloride Elixir is a pleasantly flavored antihistaminic elixir which is readily compounded. Diphenhydramine Hydrochloride is commercially available in powder form. The official elixir contains 12.5 mg./5 ml.

Category, Antihistaminic; *Usual dose*, 25 mg. up to four times a day; *Range*, 25 to 50 mg.

Commercial source, Benadryl Hydrochloride Elixir (Parke, Davis).

DIPHTHERIA AND TETANUS TOXOIDS, ALUMINUM HYDROXIDE ADSORBED.—This is a sterile suspension prepared by mixing suitable quantities of the aluminum hydroxide adsorbed forms of diphtheria and tetanus toxoids in order to provide one immunizing dose of each toxoid in the total dosage prescribed on the label. The purpose of the treatment with aluminum hydroxide is to delay absorption. Being absorbed more slowly into circulation, and excreted slowly, they stimulate greater immunity than does a plain toxoid.

Category, Specific immunizing agent; *Usual dose*, Hypodermic, two injections of 0.5 or 1 ml., as specified in the labeling, 4 to 6 weeks apart.

Commercial source, Diphtheria and Tetanus Toxoids Alhydrox (Cutter).

DIPHTHERIA AND TETANUS TOXOIDS AND PERTUSSIS VACCINE COMBINED, ALUMINUM HYDROXIDE ADSORBED.—This is a sterile mixture of diphtheria toxoid, tetanus toxoid, and pertussis vaccine, adsorbed on aluminum hydroxide. The antigens are combined in such proportion as to yield a mixture containing one immunizing dose of each in the total dosage prescribed on the label.

This is used in the simultaneous active immunization of susceptible persons against diphtheria, tetanus and whooping cough. As indicated in the discussion of Aluminum Hydroxide Adsorbed Diphtheria and Tetanus Toxoids, this product delays absorption providing a higher immunization titer.

Category, Specific immunizing agent; *Usual dose*, Hypodermic, three injections of 0.5 or 1 ml., as specified in the labeling, 3 to 4 weeks apart.

Commercial source, Dip-Pert-Tet, Alhydrox (Cutter).

DIPHTHERIA TOXIN, DIAGNOSTIC, INACTIVATED.—Inactivated Diagnostic Diphtheria Toxin (Schick Test Control) is a portion of a manufactured lot of diagnostic diphtheria toxin which has been inactivated by heating between 70° and 85° for 5 minutes and which may be used simultaneously with the diagnostic diphtheria toxin of the same lot to assist in differentiating in doubtful reactions to the active toxin.

Category, Diagnostic aid (immunologic); *Usual dose*, Intracutaneous, 0.1 ml.

Commercial source, Schick Control Diluted (Cutter); Schick Test Control (Lilly).

DIPHTHERIA TOXOID, ALUMINUM HYDROXIDE ADSORBED.—This is a sterile suspension of diphtheria toxoid adsorbed on aluminum hydroxide from a formaldehyde-treated solution of the products of growth of the diphtheria bacillus (*Corynebacterium diphtheriae*).

It is used for active immunization against diphtheria; however, since some local and general reactions have been observed in adults and in children over eight years of age, an intracutaneous test dose should be given to determine sensitivity. Because of its physical character, absorption is delayed, giving higher antigenicity.

Category, Specific immunizing agent; *Usual dose*, Hypodermic, two injections of 0.5 or 1 ml., as specified in the labeling, 4 to 6 weeks apart.

Commercial source, Alhydrox Diphtheria Toxoid (Cutter).

DOXYLAMINE SUCCINATE; —TABLETS.—As an ethanolamine derivative closely related to diphenhydramine, this antihistaminic shares many of the latter's attributes and disadvantages. Its onset of action is prompt and its duration of action is variable, there being some evidence of persistence up to 24 hours. The incidence of its main side-effects of drowsiness and slight nausea may be high enough with larger doses to rank it with diphenhydramine in the "marked" group, although the clinical evidence on the incidence shows disagreement.

Category, Antihistaminic; *Usual dose*, 25 mg. up to four times a day as necessary; *Range*, 12 to 25 mg.

Commercial source, Decapryn Succinate Tablets (Merrell).

DUSTING POWDER, ABSORBABLE.—Absorbable Dusting Powder (Starch-derivative Dusting Powder) is an absorbable powder prepared by processing cornstarch. It contains not more than 2% magnesium oxide. It is a white, odorless powder.

The cornstarch is treated by physical and chemical means to improve its lubricating value and to prevent gelatinization when autoclaved. It is used as a replacement for talcum powder as a lubricating agent for rubber gloves used in surgery. Since it is readily absorbed from the peritoneal cavity through physiological processes, it avoids the irritation seen with talcum powder.

Category, Surgeon's glove lubricant.

Commercial source, Bio-Sorb Powder (Ethicon).

ERYTHROMYCIN; —TABLETS.—Erythromycin is an antibacterial substance produced by the growth of *Streptomyces erythreus* Waksman.

It is clinically effective against certain infections caused by Gram-positive bacteria. These include certain beta-hemolytic streptococci, pneumococci and staphylococci. It is indicated for infections produced by organisms which have lost their susceptibility to penicillin or to other antibiotics and in patients who have become allergic to penicillin.

U.S.P. XV recognizes erythromycin only in the form of its base. Salts are coming into use because of special claimed advantages. (*See* New and Nonofficial Remedies for 1955.)

Category, Antibiotic; *Usual dose*, 300 mg. every 6 hours; *Range*, 200 to 600 mg.

Commercial source, Ilotycin Tablets (Lilly); Erythromycin Tablets (Upjohn); [also Erythrocin Filmtabs (Abbott) which is Erythromycin Stearate, not U.S.P.].

ESTRADIOL DIPROPIONATE.—Estradiol Dipropionate is the dipropionyl ester of the beta isomer of estradiol. It is now known that the physiologically active isomer has the *cis*-configuration and is the beta isomer rather than the alpha isomer as defined in U.S.P. XIV.

This ester of estradiol is less subject to destruction in the tissues than the parent compound; therefore, its action is prolonged. As used therapeutically, estradiol dipropionate is more potent than estradiol benzoate because of its longer duration of action. It is useful in estrogenic deficiencies and for suppression of prostatic carcinoma.

Category, Estrogenic hormone; *Usual dose*, Intramuscular, 1 mg. daily; *Range*, 0.1 to 5 mg.

Commercial source, Ovocylin Dipropionate (Ciba); Estradiol Dipropionate (Creviston & Co., Jasonols Chem. Corp., Mann Fine Chemicals).

ETHINYL ESTRADIOL.—Esterification of estradiol with the ethinyl radical delays the decomposition of the estradiol molecule in the stomach, intestine and liver; thus the drug can be given orally. It is one of the most potent estrogens known. In the female it compensates for deficiencies in estrogen production; in the male it opposes some of the actions of the androgens, as in prostatic carcinoma. The incidence of side reactions is about the same proportion as occurs with other orally active estrogens.

Category, Estrogen; *Usual dose*, 50 mcg. up to three times a day; *Range*, 20 to 50 mcg.

Commercial source, Eticylol (Ciba); Lynoral (Organon); Estinyl (Schering); Oradiol (Vanpelt & Brown); Orestralyn (McNeil); Esteed (Warren-Teed); Diogyn E (Pfizer); Ethinyl Estradiol (Funk).

EVANS BLUE; —INJECTION.—Evans Blue Injection contains the highly soluble dye in water for injection. It is useful as an intravenous diagnostic agent for the colorimetric determination of blood volume by the plasma-dye-hematocrit method. This determination is important in the detection of impending shock and also important as a guide to the proper dosage of blood, plasma or other fluids needed in conditions accompanied by decreased blood volume.

Category, Diagnostic agent—blood volume estimation; *Usual dose*, Intravenous, 25 mg.

Commercial source, Evans Blue Solution (Warner-Chilcott).

FERROUS GLUCONATE [N.F. IX]; **—TABLETS.**—Ferrous Gluconate is now recognized in the U.S.P. along with the tablets which have not been official heretofore.

Category, Hematinic; *Usual dose*, 300 mg. three times a day; *Range*, 200 to 600 mg.

Commercial source, Fergon Tablets (Winthrop); Nionate Tablets (Nion); and from many other sources under the official title.

FLUORESCEIN SODIUM SOLUTION.—Although Fluorescein Sodium has been official for some time, this monograph for the first time gives a standard formula for the sterile solution for ophthalmic purposes. The solution contains 2% fluorescein sodium and a suitable antibacterial agent.

The solution is useful for diagnosis of eye lesions and for detection of foreign bodies in the eye. When placed in the eye, any injured epithelial area shows a green fluorescence while healthy portions of the cornea remain unaffected.

Category, Diagnostic aid (ophthalmic), *For external use,* Topically on the conjunctiva.

FOLIC ACID INJECTION.—Folic Acid Injection is a solution of folic acid in water for injection prepared with the aid of alkali.

It is useful in the treatment of sprue, nutritional and other forms of macrocytic anemias refractory to liver therapy, and certain types of leukopenia and agranulocytosis.

Category, Vitamin-B complex vitamin; *Usual dose,* 10 mg. daily; *Range,* 5 to 10 mg.

Commercial source, Sodium Folvite Solution (Lederle); Folic Acid Injection (Estro Chem. Co.).

FORMALDEHYDE SOLUTION [N.F. IX].—Formaldehyde Solution is a suitable disinfectant in the presence of substantial amounts of organic matter.

Category, Disinfectant, *Application,* Diluted 1 to 10 up to full strength on inanimate objects.

GAUZE, PETROLATUM.—Petrolatum Gauze is absorbent gauze saturated with 4 times its weight of white petrolatum. It is sterile. The monograph includes directions for the preparation and sterilization of the product.

It is used as a bland, emollient dressing for burns, abrasions, etc., and for a wide variety of other surgical uses.

Category, Protective.

Commercial source, Vaseline Sterile Petrolatum Gauze Dressings (Chesebrough).

GLOBULIN, IMMUNE SERUM.—This was previously official in U.S.P. XIV as Immune Serum Globulin (Human). The new monograph specifies that it is a sterile solution of globulins which contains those antibodies normally present in adult human blood, no longer specifying only gamma globulin. It is used in the prevention and modification of measles.

Category, Specific immunizing agent; *Usual dose,* subcutaneous and intramuscular—prophylactic (measles), 0.22 ml. per Kg., (infectious hepatitis) 0.1 ml. per Kg; modification (measles), 0.045 ml. per Kg.

Commercial source, Immune Serum Globulin (Human) (Cutter, Lederle, Pitman-Moore, Sharp & Dohme).

GLYCERIN SUPPOSITORIES.—Glycerin Suppositories of U.S.P. XV represent a number of changes as to the percentage of each ingredient and the exact method of preparation. The result is a firmer, more esthetic product.

Category, Rectal evacuant.

HEXACHLOROPHENE; —LIQUID SOAP.—Hexachlorophene is incorporated in soaps, detergent creams, oils and other vehicles for topical application to reduce the number and to inhibit the metabolism of pathogenic microorganisms that occur naturally in the skin bacterial flora. It is most effective against Gram-positive bacteria. Products containing hexachlorophene are used for pre-operative scrubbing and pre-operative and post-operative preparation of patient's skin. It is used in concentrations of 2 to 3% in bar and liquid soaps (based on the amount of anhydrous soap present) and in detergent preparations, and in concentrations of 0.5 to 1% in products that are applied to the skin undiluted.

Category, Anti-infective; detergent; *For external use,* Topically to skin.

Commercial source, Surgi-Cen Liquid Soap (Central); Gamophen Surgical Soap (Ethicon Suture Labs.); Hexachlorophene Liquid Soap (J. I. Holcomb Man. Co.); Hexachlorophene Germa-Medica Liquid Surgical Soap (Huntington Labs.); Hex-O-San Surgical Soap (Retort Pharm. Co.); Septisol with Hexachlorophene (Vestal, Inc.); pHisoHex (Winthrop).

HYALURONIDASE FOR INJECTION.—This is a sterile, dry, soluble, enzyme product prepared from mammalian testes and capable of hydrolyzing mucopolysaccharides of the type of hyaluronic acid. It contains not more than 0.25 mcg. of tyrosine for each U.S.P. Hyaluronidase Unit. It may contain a suitable stabilizer.

Hyaluronic acid, an essential component of the "ground substance" of tissues, limits the spread of fluids and other extra-cellular material. Since hyaluronidase softens hyaluronic acid in the tissues, it causes injected solutions or local accumulations of fluids (transudates and blood) to spread further and faster than normal and facilitate their absorption.

Hyaluronidase may be used to increase the spread and, consequently, the absorption of parenteral products, *e.g.,* to diffuse local anesthetics at the site of injection, particularly in nerve block anesthesia, to increase the diffusion and absorption of other injected material such as penicillin; and to increase the diffusion and absorption of local accumulations of transudates or blood.

Category, Spreading factor; *Usual dose,* Hypodermoclysis, 150 U.S.P. Units; *Range,* 15 to 1500 Units.

Commercial source, Hyazyme (Abbott); Alidase (Searle); Endodase Lyophilized (Squibb); Lyophilized Wydase (Wyeth); Solution Wydase (Wyeth).

HYDROCORTISONE; —TABLETS.—The physiological and therapeutic effects of hydrocortisone are qualitatively similar to those of cortisone. Hydrocortisone is probably more active, weight for weight, and is less irritating to the synovial membranes when injected into joint spaces; however, it has not been demonstrated that the incidence of undesirable metabolic or hormonal effects is minimized by the use of hydrocortisone as compared with cortisone. It is readily absorbed following oral administration, the effects being manifest in 3 to 10 hours and persisting about 12 to 14 hours.

Category, Adrenocortical hormone; *Usual dose,* Oral, 10 mg., two to four times daily; *Range,* 5 to 20 mg.

Commercial source, Cortril (Pfizer); Hydrocortone (Sharp and Dohme); Cortef (Upjohn).

HYDROCORTISONE ACETATE; —OINTMENT; —SUSPENSION, STERILE.—Hydrocortisone Acetate (Compound F) is useful for topical application in a form of a 1 or 2.5% ointment for the local management of allergic dermatoses. It is also used as a 0.5 or 2.5% suspension and as a 1.5% ointment for ophthalmic application. The Suspension is a

sterile suspension of Hydrocortisone Acetate in a suitable aqueous medium.

Category, Adrenocortical hormone; *Usual dose,* Intra-articular, 25 mg; *Range,* 5 to 50 mg.; *For external use,* Topically as 1 and 2.5% solutions, or as an ointment.

Commercial source, Cortril Acetate Ophthalmic Ointment, Cortril Acetate Suspension (Pfizer); Hydrocortone Acetate Ointment, Hydrocortone Acetate Ophthalmic Ointment, Hydrocortone Acetate Ophthalmic Suspension, Hydrocortone Acetate Suspension (Sharp & Dohme); Cortef Acetate ointment (Upjohn).

HYDROXYAMPHETAMINE HYDROBROMIDE.—This amphetamine derivative has the general properties of other sympathomimetic amines. It is somewhat less toxic than epinephrine and amphetamine. It produces little or no ephedrine-like central stimulation and is used mainly for its peripheral effects. Topical solutions produce shrinkage of the nasal mucosa, being about twice as effective as ephedrine in terms both of promptness and duration of action. They are also less irritating. Upon instillation in the eye, a 1% solution produces mydriasis suitable for ophthalmoscopic examination as well as inducing cycloplegia for refraction of adults and children, and promoting return of accommodation. By injection or by oral administration, the drug produces cardiovascular and intestinal effects similar, though not identical, to other sympathomimetic agents.

Category, Sympathomimetic; *For external use,* Topically as a 0.25 to 1% solution.

Commercial source, Aqueous Paredrine Hydrobromide Solution 1%, Ophthalmic Paredrine Hydrobromide Solution 1% (S.K.F.).

IOPANOIC ACID; —TABLETS.—Iopanoic Acid (Iodopanoic Acid) is a water-insoluble, organic iodine compound for oral use as a radiopaque medium in cholecystography. It seldom produces undesirable reactions, and has a low toxicity. It produces dense shadows of the gall bladder permitting visualization of the extrahepatic ducts.

Category, Radiopaque medium (cholecystographic); *Usual dose,* 3 Gm.; *Range,* 2 to 6 Gm.

Commercial source, Telepaque Tablets (Winthrop).

IOPHENDYLATE INJECTION.—Iophendylate Injection is a sterile mixture of isomers of ethyl iodophenylundecylate, in uniform, but unknown, proportions.

It is an absorbable iodized fatty acid compound of low viscosity designed especially for myelography. It is particularly useful for the study of the lumbar region but is injected intrathecally also. When most of the injecte .naterial is removed, the remainder usually is absorbed within two months. When none is removed, absorption proceeds at a variable rate, sometimes requiring several years.

Category, Radiopaque medium (myelographic); *Usual dose,* Intrathecal and by special injection, 6 ml; *Range,* 0.5 to 12 ml.

Commercial source, Pantopaque Injection (Lafayette Pharmacal).

ISOFLUROPHATE; —OPHTHALMIC SOLUTION.—Caution: *When handling Isoflurophate in open containers, protect the eyes, nose and mouth with a suitable mask, and avoid contact with the skin.*

Isoflurophate is a clear, colorless or faintly yellow liquid. Its vapor is extremely irritating to the eye and mucous membranes. It is decomposed by moisture, with the formation of hydrogen fluoride; therefore it is stable only in oil. It is sparingly soluble in water. It is soluble in alcohol and in vegetable oils.

Isoflurophate reduces intra-ocular tension through a powerful, relatively prolonged, miotic action. It inhibits cholinesterase irreversibly, its action on the enzyme being more prolonged than that of physostigmine and similar drugs whose action is reversible. When properly used, systemic side effects are rare. It is used to relieve chronic congestive glaucoma and to control the intra-ocular tension in glaucoma.

Category, Parasympathomimetic (ophthalmic); *For external use,* Topically as a 0.01 to 0.1% solution one to three times a day.

Commercial source, Floropryl (Sharp & Dohme) 0.1% in peanut oil.

ISONIAZID; —TABLETS.—Isoniazid is an antibacterial agent with high *in vitro* activity against *Mycobacterium tuberculosis.* It seems to have no chemotherapeutic action on other pathogenic microorganisms. It was originally used only for streptomycin-resistant cases, but recent studies on its combined use with streptomycin, as well as with aminosalicylic acid, indicate that these combinations may also be employed to advantage.

Category, Tuberculostatic antibacterial; *Usual dose,* 100 mg. twice a day; *Range,* 50 to 200 mg.

Commercial source, Cortinazin (Pfizer); Dibutin (Schering); Niconyl (Parke, Davis); Nydrazid (Squibb); Pyrizidin (Nepera); Rimifon (Roche); Tisin (Funk); Tyvid (Merrell); INH (Lilly).

ISOPHANE INSULIN INJECTION.—Isophane Insulin Injection (NPH Insulin) is a sterile suspension, in a buffered water medium, of insulin made from zinc-insulin crystals modified by the addition of protamine in a manner such that the solid phase of the suspension consists of crystals composed of insulin, protamine and zinc. In preparing Isophane Insulin Injection, sufficient insulin is used to provide either 40 or 80 U.S.P. Insulin Units for each ml. of the Injection. The U.S.P. notes, "*Isophane Insulin Injection differs in its action from that of other insulin injections in this Pharmacopeia in both time of onset and duration.*"

This is a modified protamine zinc insulin which is crystalline rather than amorphous in character. Its blood-lowering action is intermediate between globin insulin and protamine zinc insulin. The onset of action is usually 2 hours after subcutaneous injection, whereas 6 to 8 hours are required for protamine zinc insulin. Its peak effect occurs 10 to 20 hours after administration, and its duration of action is 20 to 30 hours.

Category, Intermediate-acting insulin preparation; *Usual dose,* Subcutaneous, according to the needs of the patient; *Range,* 10 to 80 U.S.P. Units.

Commercial source, NPH Iletin (Lilly); NPH Insulin (Squibb).

ISOPROTERENOL HYDROCHLORIDE; —INHALATION; —TABLETS.—Isoproterenol Hydrochloride Inhalation is a solution in water for injection made isotonic by the addition of sodium chlo-

ride. The U.S.P. notes, "*Do not use the Inhalation if it is brown in color or contains a precipitate.*"

When administered sublingually or by oral inhalation, Isoproterenol is effective in the treatment of mild and moderately severe asthma. Following oral inhalation, the drug tends to liquefy tenacious mucus thus exerting a mild expectorant action. The drug is effective in epinephrine-fast patients. It is also useful by the sublingual route to increase the ventricular rate in patients with heart block and to prevent cardiac standstill caused by carotid sinus stimulation.

Category, Sympathomimetic; *Usual dose*, Sublingual, 10 mg. every 4 hours as necessary. By inhalation, 0.25 mg. as necessary. *Range*, Sublingual, 5 to 20 mg.

Commercial source, Sublingual Tablets and Inhalant Solution—Aludrine (Lilly); Isuprel (Winthrop).

JUNIPER TAR [N.F. IX].—Juniper Tar (Cade Oil) is recognized in U.S.P. XV for its value in dermatology.

Category, Local anti-eczematic; *For external use*, Topically as a 5% ointment.

LEVARTERENOL BITARTRATE; —INJECTION.—Levarterenol Bitartrate Injection is a sterile solution frequently given by infusion in diluted form. The U.S.P. notes, "*Do not use the Injection if it is brown in color or contains a precipitate.*"

Levarterenol Bitartrate is the most potent pressor antidote for shock known. Its action differs clinically from epinephrine chiefly by its over-all vasoconstrictor influence, its marked slowing of the pulse rate and the absence of a stimulant effect on cardiac output. It dilates the coronary arteries more than twice as effectively as epinephrine. It may be administered to diabetic patients because its hyperglycemic effect is slight. It is used in the maintenance of blood pressure in acute hypotensive states.

Category, Sympathomimetic; *Usual dose*, Intravenous infusion, 5 mcg. per minute; *Range*, 1 to 10 mcg.

Commercial source, Levophed Bitartrate Solution (Winthrop).

MAGNESIUM OXIDE.—This new monograph represents a combination of the two U.S.P. XIV monographs, *i.e.*, Heavy Magnesium Oxide and Magnesium Oxide. The distinction is made in the trade by the labeling.

Category, Antacid; cathartic; *Usual dose*, Antacid, 250 mg.; cathartic, 4 Gm.

MAGNESIUM STEARATE.—Magnesium Stearate is a mixture of the magnesium salt of stearic acid with a variable proportion of the closely related magnesium palmitate. It occurs as a fine, white, bulky powder, which is unctuous, adhering readily to the skin. It is officially recognized because of its use as a lubricating agent in the manufacture of tablets.

Category, Pharmaceutic necessity for tablets.

MENADIOL SODIUM DIPHOSPHATE.—This is a synthetic, water-soluble vitamin K analogue that reduces abnormally prolonged blood coagulation time and decreases the tendency to hemorrhage in cases of hypoprothrombinemia by raising the prothrombin level. Because of its water-solubility it can be given orally without a bile salt adjuvant.

Category, Prothrombogenic; *Usual dose*, Oral and parenteral, 5 mg. daily; *Range*, 4 to 75 mg.

Commercial source, Synkayvite Sodium Diphosphate Tablets (Roche); Synkayvite Sodium Diphosphate Solution (Roche).

MEPHENTERMINE SULFATE; —INJECTION.—Mephentermine Sulfate exhibits a pressor action comparable to that of epinephrine and ephedrine. It produces the same quantitative pressor response as epinephrine, but does not induce cardiac arrhythmias or directly affect the myocardium, and consequently has greater safety. It is generally used in the treatment of severe hypotensive states.

Although the injection is the only dosage form recognized, mephentermine is used in inhalers as the free amine or as the sulfate in aqueous solution and is recommended as a vasoconstrictor and nasal decongestant. It is reported to possess no stimulating properties in the recommended dosage.

Category, Sympathomimetic; *Usual dose*, Intravenous and intramuscular, 20 mg.; *Range*, 20 to 80 mg.

Commercial source, Wyamine Sulfate Injection (Wyeth).

MERCAPTOMERIN SODIUM STERILE.—This is a mercurial diuretic that causes much less local irritation than other organomercurial compounds upon injection, other than intravenously. Thus, it can be used subcutaneously, and by this route it produces diuretic effects similar to those of equivalent doses of other mercurial diuretics administered intravenously. Though less toxic to the heart than other mercurial diuretics it still has the potential toxic effects of mercury. Preliminary acidification of the urine sometimes enhances its diuretic effect. Its action is more prolonged than that of other mercurials, and may extend over 24 to 36 hours. It is contraindicated in advanced chronic nephritis and acute renal disease.

Category, Diuretic; *Usual dose*, Parenteral, 130 mg. (in 1 ml.) once or twice a week; *Range*, 26 to 260 mg.

Commercial source, Thiomerin Sodium (Wyeth); Diucardyn Sodium (Ayerst).

METHACHOLINE CHLORIDE STERILE.—Methacholine Chloride was previously official. This new monograph represents the form in which it is commercially available.

Category, Parasympathomimetic; *Usual dose*, Subcutaneous, 20 mg.; *Range*, 10 to 60 mg.

Commercial source, Mecholyl Chloride Powder (Sharp & Dohme).

METHADONE HYDROCHLORIDE; —INJECTION; —TABLETS.—Methadone Hydrochloride resembles morphine in action. Except when taken orally, it causes less nausea and emesis than morphine, and in minimal analgetic doses causes less respiratory depression. It seems slightly less sedative than morphine, but its effect lasts longer than that of morphine, and it is better absorbed when administered orally. It is used as an analgetic for moderate and severe pain. It is soluble in water, but incompatible with alkaline solutions and with Wild Cherry Syrup U.S.P.

Category, Analgetic; *Usual dose,* Oral and subcutaneous, 7.5 mg. every 4 hours as necessary; *Range,* 5 to 10 mg.

Commercial source, Methadone Hydrochloride (Abbott, Breon, Horton & Converse, Mallinckrodt, Massengill, National Drug, Parke Davis, and Upjohn); Adanon Hydrochloride (Winthrop); Dolophine Hydrochloride (Lilly).

METHAMPHETAMINE HYDROCHLORIDE TABLETS.—Methamphetamine Hydrochloride Tablets represent official recognition of a dosage form in the U.S.P. It resembles amphetamine sulfate, in action but its central stimulant effects are slightly greater and the circulatory action is slightly less than those of amphetamine. Since it depresses the motility of the gastrointestinal tract and allays the sensation of hunger, it is often used as an adjunct in the treatment of obesity.

Commercial source, Amphedroxyn HCl (Lilly); Apamine (Stillco); Desamine HCl (Starr); Desoxyn HCl (Abbott); Desyphed HCl (Winthrop); Dexstim (Central); Doxyfed HCl (Raymer); D.O.E. (Breon); Drinalfa HCl (Squibb); Efroxine HCl (Maltbie); Methedrine HCl (Burroughs Wellcome); Methoxyn (Kenny Pharm); Norodin HCl (Endo); Semoxydrin HCl (Massengill); Syndrox HCl (McNeil). As powder (Chemo-Puro; DuMont Pharm.; International Chem. Labs.; Penhurst; Rorer; Warren-Teed; West-ward).

METHANTHELINE BROMIDE; —TABLETS.—Methantheline Bromide produces the peripheral action of cholinergic blocking drugs as well as a ganglionic blocking action. Its side effects are typical of atropine-like drugs, but it causes less tachycardia and less postural hypotension than does tetraethylammonium chloride. Toxic doses produce a curare-like action at the somatic neuromuscular junction. The drug effectively inhibits motility of the gastrointestinal and genito-urinary tracts and, to a variable degree, diminishes the volume of perspiration and salivary, gastric and pancreatic secretions. It is used as an adjunct in the management of peptic ulcer, chronic hypertrophic gastritis, and certain less specific forms of gastritis. The most common side reactions are mydriaisis, cycloplegia, and dryness of the mouth.

Category, Parasympatholytic; *Usual dose,* 50 mg. four times a day; *Range,* 25 to 100 mg.

Commercial source, Banthine Bromide (Searle).

METHAPYRILENE HYDROCHLORIDE; —TABLETS.—Methapyrilene Hydrochloride is an ethylenediamine derivative containing the thenyl and pyridyl radicals. Chemically, it is a modification of tripelennamine in that its thenyl group simply replaces the benzyl group in the latter antihistaminic. It takes effect in 30 to 60 minutes after administration, and lasts for several hours. It falls into the "intermediate" group with respect to side-effects, with drowsiness, dizziness, gastrointestinal irritation and nervousness being reported.

Category, Antihistaminic; *Usual dose,* 50 mg. up to four times a day as necessary; *Range,* 25 to 100 mg.

Commercial source, Barhist (Barry); Histadyl Hydrochloride (Lilly); Semikon Hydrochloride (Massengill); Thenylene Hydrochloride (Abbott). Also available under the official title from: Blue Line, Cowley Pharmaceuticals, Hiss Pharmacal, West-ward.

METHENAMINE MANDELATE; —TABLETS.—This drug combines the actions of two established urinary antiseptics, methenamine and mandelic acid. The combination has the advantage that it is effective with smaller amounts of mandelic acid and, thus, may avoid the nausea and vomiting occasionally attributed to the use of mandelic acid alone. The compound acts somewhat as an acidifying agent. It is used in the treatment of pyelitis, pyelonephritis, cystitis and infections accompanying a neurogenic bladder. There are seldom any untoward effects associated with the drug. It is contraindicated in the presence of renal insufficiency.

Category, Urinary tract anti-infective; *Usual dose,* 1 Gm. up to four times a day; *Range,* 250 mg. to 1 Gm.

Commercial source, Mandelamine (Nepera).

METHIMAZOLE; —TABLETS.—Methimazole is an antithyroid drug with similar indications and use as propylthiouracil, but it is perhaps ten times as potent and its effect often is seen more promptly. Side effects are also similar to those of propylthiouracil and have included skin rashes, urticaria, joint pains and agranulocytosis.

Category, Thyroid inhibitor; *Usual dose,* 10 mg. every 8 hours; *Range,* 5 to 20 mg.

Commercial source, Tapazole Tablets (Lilly).

METHOXAMINE HYDROCHLORIDE; —INJECTION.—This is a sympathomimetic amine compound which exhibits the vasopressor action (peripheral vasoconstriction) characteristic of other chemical agents of this class. This drug differs from others in that the cardiac rate decreases as the blood pressure increases. It is indicated primarily during surgery to maintain or restore adequate arterial blood pressure, especially in conjunction with spinal anesthesia. It is useful as an adjunct in the treatment of hypotension associated with hemorrhage, trauma and surgery.

Category, Sympathomimetic; *Usual dose,* Intramuscular, 15 mg.; intravenous, 5 mg.; *Range,* Intramuscular, 5 to 20 mg.; intravenous, 2.5 to 10 mg.

Commercial source, Vasoxyl Hydrochloride (Burroughs Wellcome).

METHYLCELLULOSE [N.F. IX].—Methylcellulose is used as an adjunct to re-educative measures in the treatment of chronic constipation. Taken with water, it forms a colloidal solution in the upper alimentary tract; this solution loses water in the colon to produce a gel which increases the bulk and softness of the stool. The dose is gradually reduced as the patient resumes normal bowel habits.

Category, Bulk laxative; *Usual dose,* 1 Gm. with water one to four times daily; *Range,* 1 to 4 Gm.

Commercial source, Cellothyl Tablets and Granules (Warner-Chilcott); Syncelose Tablets (Blue Line); Liquid Cologel (Lilly); Hydrolose Syrup (Upjohn), and from many other sources under its official title.

METHYLROSANILINE CHLORIDE [N.F. IX]; **—SOLUTION** [N.F. IX]; **—TABLETS.**—Methylrosaniline Chloride Tablets are a new dosage form for use as an anthelmintic against *Strongyloides* and *Oxyuris* infestations.

Category, Anthelmintic; anti-infective; *Usual dose.* Oral, 60 mg. three times a day for 1 to 2 weeks;

Range, 10 to 60 mg.; *For external use*, Topically as a 1 per cent solution.

Commercial source, available from many sources as Gentian Violet Tablets.

METHYLTHIOURACIL; —TABLETS.—The actions and use of Methylthiouracil are essentially those of propylthiouracil. It shows a higher incidence of side reactions than propylthiouracil or methimazole. It is useful in patients unable to tolerate or refractory to other antithyroid drugs.

Category, Thyroid inhibitor; *Usual dose*, 50 mg. four times a day; *Range*, 150 to 250 mg.

Commercial source, Methiacil (Schwarz); Muracil (Organon); Thimecil (Physicians' Drug & Supply Co.). It is also available under the official title from Delta Chem. Works, Jasonols Chem. Corp., Mann Fine Chem., Schwarz.

MORPHINE HYDROCHLORIDE [N.F. IX].—The general utility of the hydrochloride of morphine has dictated its recognition in U.S.P. XV along with the sulfate.

Category, Narcotic analgetic; *Usual dose*, Oral and subcutaneous, 15 mg. every 4 hours as necessary; *Range*, 8 to 20 mg.

NALORPHINE HYDROCHLORIDE; —INJECTION.—Although a derivative of morphine, and subject to federal narcotic laws, Nalorphine promptly reverses the effects of overdosage with morphine. It relieves respiratory depression in patients narcotized by large doses of morphine, meperidine and methadone. It is useful as an antidote in the treatment of poisoning from the above-mentioned narcotics, but is not useful as a cure or for the relief of narcotic addiction.

Category, Respiratory stimulant (specific antidote for morphine and its derivatives, meperidine and methadone); *Usual dose*, Parenteral, 5 mg.; *Range*, 5 to 40 mg.

Commercial source, Nalline Hydrochloride Solution (Sharp & Dohme).

NEOMYCIN SULFATE; —OINTMENT; —TABLETS.—Neomycin Sulfate differs from other antibacterial agents in that it is extremely stable and active in alkaline solution. It is not inactivated by exudates, enzymes, gastrointestinal secretions and by-products of digestion or bacterial growth. Prepared solutions retain their potency for at least 1 year at room temperature, although such solutions may show a progressive deepening of color. Refrigeration of neomycin solutions, therefore, is recommended.

It exhibits activity against a variety of Gram-positive and Gram-negative bacteria. It is useful for topical application as a solution or ointment in the local treatment or prevention of susceptible infections of the skin and the eye. It is also useful as an intestinal antiseptic by oral administration for suppression of the usual bacterial flora of the colon prior to surgery on the intestine. Because little of it is absorbed from the gastrointestinal tract, it rarely produces systemic or toxic effects when administered orally. It is usually well tolerated and is relatively nonirritating when used topically; a mild laxative effect occurs with oral administration.

Category, Antibiotic; *Usual dose*, 1 Gm. of base every 4 hours; *Range*, 4 to 10 Gm. daily; *For external use*, Topically as a 0.5 per cent ointment.

Commercial source, Neomycin Sulfate Ointment & Ophthalmic Ointment (Lilly); Mycifradin Sulfate Powder & Tablets (Upjohn); Neomycin Sulfate Ointment (Commerce Drug, Norwich Pharm. Co.).

NICOTINIC ACID INJECTION.—Nicotinic Acid and Nicotinic Acid Tablets have been official for many years but the injection is now introduced for the first time. In order to prepare a more concentrated product, sodium carbonate or sodium hydroxide is used to increase the solubility of the acid. The injection is used to prevent or treat pellagra, and rapidly heals the alimentary, dermal, mental and other manifestations of this disease.

Category, Peripheral vasodilator; vitamin-B complex vitamin; *Usual dose*, Parenteral—50 mg. three to ten times a day; *Range*, Up to 500 mg. daily.

Commercial source, Available from numerous suppliers.

OXYTETRACYCLINE; —FOR SUSPENSION, ORAL.—Oxytetracycline is a dull yellow, odorless crystalline powder which is isolated from the metabolic products of the actinomycete, *Streptomyces rimosus* when the microorganism is grown on suitable culture media. The base is soluble in acids and alkalies, but very slightly soluble in water. The base is, however, suitable for oral administration for the same purposes as the hydrochloride. The actions and uses will be discussed in connection with the hydrochloride.

Category, Antibiotic; antiprotozoan; *Usual dose*, 250 mg. four times a day; *Range*, 250 mg. to 1 Gm.

Commercial source, Terramycin (Pfizer). See introductory remarks.

OXYTETRACYCLINE HYDROCHLORIDE; —CAPSULES; —FOR INJECTION; —OPHTHALMIC.—Oxytetracycline Hydrochloride is a very soluble antibiotic substance which shows bacteriostatic or bactericidal activity, depending on its concentration, over a broad spectrum of bacterial organisms, rickettsiae, certain viruses and protozoans. It is used in acute infections due to Gram-positive or Gram-negative bacteria including gonorrhea, brucellosis, urinary tract infections, spirochetal infections, lymphogranuloma venereum, granuloma inguinale, primary atypical pneumonia, herpes zoster, typhus (scrub, epidemic, murine), amebiasis (*Endamoeba histolytica*); and soft tissue infections including gas gangrene. When given orally, oxytetracycline and oxytetracycline hydrochloride sometimes produce nausea, vomiting and diarrhea. As with all tetracycline compounds, administration of the drug with milk tends to prevent the gastrointestinal symptoms.

The Injection is a sterile, dry mixture of the oxytetracycline hydrochloride with a suitable buffer which is usually an amino acid. Ophthalmic Oxytetracycline Hydrochloride is also buffered and may contain a bacteriostatic agent. Before use it is diluted with purified water.

Category, Antibiotic; antiprotozoan; *Usual dose*, Oral, 250 mg. four times a day; intravenous, 500 mg. daily; *Range*, Oral, 1 to 6 Gm. daily; intravenous, 500 mg. to 2 Gm. daily; *For External use*, Topically as 0.5% ophthalmic solution.

Commercial source, Terramycin Hydrochloride (Pfizer). See introductory remarks.

PENICILLIN G, BENZATHINE; —SUSPENSION, STERILE.—Benzathine Penicillin G is a complex salt of penicillin. Because of its relatively low solubility, it exhibits a more prolonged action than the more soluble salts of the drug, but provides comparable blood levels. It is not appreciably destroyed by gastric juices and may, therefore, be administered orally. It is indicated for the prevention or treatment of infections susceptible to therapy with penicillin and, in general, it shares the same indications as other compounds of penicillin G. Following oral administration loose stools have been observed in some patients, but in most cases no other signs of toxicity have been reported. Hypersensitivity reactions are reported infrequently. The U.S.P. recognizes the Sterile Suspension in water for injection, which may contain suitable, harmless dispersing agents and buffer substances. The Suspension contains not less than 300,000 U.S.P. Penicillin Units per ml.

Category, Antibiotic; *Usual dose*, Intramuscular, 600,000 U.S.P. Units (approximately 500 mg. of benzathine penicillin G), repeated as necessary; *Range*, 300,000 to 3,000,000 Units.

Commercial source, Bicillin (Wyeth); Neolin (Lilly); Permapen (Pfizer). See introductory remarks.

PENICILLIN G, POTASSIUM; PENICILLIN G, BUFFERED CRYSTALLINE; PENICILLIN G, PROCAINE; PENICILLIN G, SODIUM.—The above-named products all represent a change of official title. In U.S.P. XIV they were known respectively as: Penicillin G Potassium, Buffered Crystalline Penicillin, Penicillin Tablets, Penicillin G Procaine, and Penicillin G Sodium.

PENICILLIN G, PROCAINE, AND BUFFERED CRYSTALLINE PENICILLIN G FOR SUSPENSION, STERILE.—This is a dry mixture containing buffered crystalline penicillin G equivalent to not less than 50,000 U.S.P. Units for each 300,000 U.S.P. Units of procaine penicillin G. It also contains one or more suitable, harmless suspending or dispersing agents.

Because penicillin is excreted rapidly by the kidneys, a major problem in penicillin therapy has been that of prolonging penicillin retention in the blood and plasma. Normally, almost all of it is found in the urine within a few hours after a single intramuscular dose. Due to the low solubility of procaine penicillin G in water, it is absorbed slowly from the site of injection so that traces of it may still be found in the urine as long as 72 hours after a single intramuscular injection of 300,000 units.

This product combines the prolonged action of the procaine penicillin G with the rapid action of the crystalline penicillin G. The crystalline penicillin G is highly purified and free from many of the impurities to which many of the reactions due to penicillin therapy were attributed. It has been reported that with this combination therapeutic blood levels are maintained in patients at bed rest for 96 hours in over 90% of the cases.

Category, Antibiotic; *Usual dose*, Intramuscular, 400,000 U.S.P. Units one or two times daily as required.

Commercial source, See introductory remarks.

PENICILLIN G, PROCAINE, SUSPENSION, STERILE.—This is a sterile suspension in water for injection of procaine penicillin G and one or more suitable, harmless suspending or dispersing agents, buffer substances and preservatives. It contains not less than 300,000 U.S.P. Penicillin Units per ml.

As indicated above, due to its low solubility, this form of penicillin is employed for prolonged action.

Category, Antibiotic; *Usual dose*, Intramuscular, 300,000 U.S.P. Units (300 mg. of procaine penicillin G) once or twice a day; *Range*, 300,000 to 600,000 Units.

Commercial source, See introductory remarks.

PENICILLIN G, PROCAINE, WITH ALUMINUM STEARATE SUSPENSION, STERILE.—This is a sterile suspension of procaine penicillin G in oil made thixotropic with 2 per cent of aluminum monostearate. It contains not less than 300,000 U.S.P. Penicillin Units per ml.

The presence of the aluminum monostearate in this preparation delays the absorption of penicillin from the injection site. Detectable amounts of penicillin are found in the blood of test subjects for at least 60 hours after the injection of a dose of 300,000 units.

Category, Antibiotic; *Usual dose*, Intramuscular, 300,000 U.S.P. Units (300 mg. of procaine penicillin G) once or twice a day, *Range*, 300,000 to 600,000 Units.

PENICILLIN-DIHYDROSTREPTOMYCIN FOR SUSPENSION, STERILE.—This is a sterile, dry mixture of procaine penicillin G and/or potassium or sodium penicillin and dihydrostreptomycin sulfate. It contains not less than 250 mg. of dihydrostreptomycin base for each 300,000 U.S.P. Penicillin Units, except if it contains a mixture of two salts of penicillin, it contains not less than 100,000 U.S.P. Units of potassium or sodium penicillin for each 300,000 U.S.P. Units of procaine penicillin.

This combination provides a prompt and a prolonged-acting penicillin affording protection against Gram-positive organisms, with dihydrostreptomycin complementing it to act against Gram-negative organisms. Together they cover a wide spectrum of bacteria, and it has been stated that the two antibiotics are often synergistic, boosting their respective bactericidal actions.

Category, Antibiotic; *Dose*, See Dihydrostreptomycin Sulfate; Buffered Crystalline Penicillin G.

Commercial source, See introductory remarks.

PERTUSSIS IMMUNE HUMAN SERUM.—This is the liquid or dried serum of blood obtained from selected donors who have recovered from pertussis, or who have been actively immunized with pertussis vaccine. The product is subjected to ultraviolet irradiation and contains a suitable antibacterial agent. It is administered intravenously or intramuscularly for prophylaxis and treatment of "whooping cough." A refined and concentrated product is also marketed that is intended for both prophylactic and therapeutic use; however, the concentrate should not be administered intravenously. Care should be taken to check dosage recommended on the package.

Category, Treatment or prevention of whooping cough; *Usual dose*, Intramuscular, 20 ml. at 1- to

(*Continued on page 174*)

Typical Days

FROM THE SECRETARY'S DIARY FOR FEBRUARY, 1956

1st Yesterday and today meeting with the A.PH.A. Council and reviewing plans for the annex to our building, budget matters, and the convention program. These meetings always supply inspiration to the headquarters staff and provide continued evidence of the altruistic service rendered by outstanding members of the profession who are chosen by their contemporaries to carry on the affairs of American pharmacy and make the policy decisions which affect the course of professional practice in our times very profoundly.

4th Now meeting with the National Conference of State Pharmaceutical Association Secretaries who have gathered in Washington to review problems and procedures in behalf of their constituents and whose discussions, as usual, covered every phase of pharmacy. At noon joining with the alumni of the Philadelphia College of Pharmacy at the Shoreham Hotel in the all-Pennsylvania college alumni luncheon. President Heinz who received an honorary degree from this institution last year joined in the luncheon and later participated in the meetings of the secretaries' conference.

6th Most of yesterday spent with the State Pharmaceutical Association Secretaries in the second day of their midyear Washington conference. At noon today joining the Alabama Congressional delegation as a guest of Thelma Morris Coburn, the ever-alert secretary of the Alabama association, who entertains this group each year in the speaker's dining room at the National Capitol.

10th Another in the series of lectures to the pharmacy seniors at G. W. University and then a meeting to develop the program for the next session of the delegates to the American Council on Education. In the evening attending the Silver Quill Dinner at the Statler as the guest of W. L. Chapman of *Medical Economics*, following which Charles Kettering received the annual award. It was inspiring to hear this venerable scientist and inventor declare that his chief interest was in the future because, as he put it, "that is where we expect to spend the rest of our time."

13th Most of this day in Baltimore with Treasurer Schaefer and the auditors reviewing the ASSOCIATION'S investments and arranging for transfer of the proceeds from expiring bonds to new government securities. Later, a meeting with the indefatigable H. A. B. Dunning reviewing fund raising procedures for the additions to the A.PH.A. headquarters building.

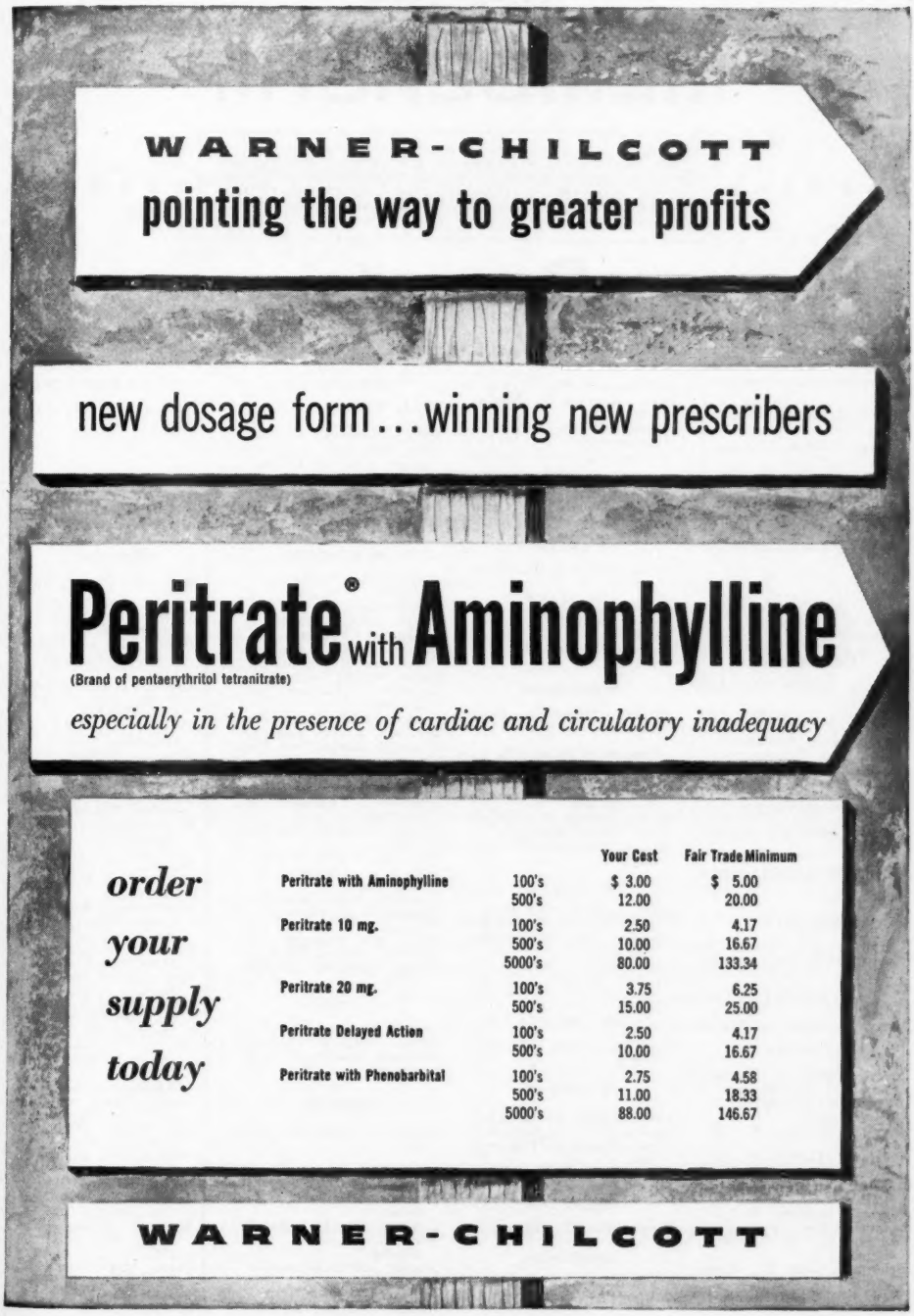
21st Now leaving for Detroit and Battle Creek, Michigan, to review with our local convention committee final plans for the 103rd A.PH.A. meeting and to discuss civil defense programs with the F.C.D.A. at their present headquarters in Battle Creek Michigan.

22nd Now meeting in Detroit with John Butts, the alert secretary of the Michigan Pharmaceutical Association, and John MacCartney, H. J. Bolton, John Vis, Al Pisa, Stephen Wilson, Curtis Waldon, Mrs. Cusick and other members of the Detroit Convention Committee to discuss final plans for entertainment of the anticipated large attendance of pharmacists at our April convention.

23rd In the early morning on the way to Battle Creek meeting Col. Stewart and Earl Grove, Drs. Whitney and Van Zandt and other members of the Federal Civil Defense Administration staff for discussion of plans for a course in civil defense procedures for pharmacists. Several hours spent with those in charge of various phases of the civil defense program as it affects pharmacy leave one with much better insight into what is being planned on a large scale to meet not only the threat of war but also instant preparations for large scale disasters of any kind. Back in Detroit in the early afternoon completing the discussions with convention committee groups and then to Washington.

27th Today joining David Stiles of the Abbott Laboratories, Dean Charles Bliven of George Washington University College of Pharmacy and W. Paul Briggs at luncheon at the Roger Smith Hotel for discussion of some of the surveys carried on by Mr. Stiles in the field of prescription practice and his extensive contacts with colleges of pharmacy where students are helping to carry on the search for prescription statistics that may prove beneficial in policy development in this field.

29th This extra day in February spent mostly at the University Club in New York City, with representatives of a number of national pharmaceutical associations, at the invitation of the Committee on Public Relations of the American Drug Manufacturers' Association, to discuss organization of the Health News Institute which is planned to make available factual data for feature writers so as to give industrial and professional pharmacy better treatment in the news.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MEMBERSHIP

THE ASSOCIATION EXTENDS A CORDIAL WELCOME TO THE FOLLOWING MEN AND WOMEN WHO WERE ACCEPTED FOR ACTIVE MEMBERSHIP DURING THE MONTH PRECEDING PREPARATION OF THIS ISSUE.

Records

NEW LIFE MEMBERS

Bergy, Gordon, Morgantown, W. Va.
Comstock, Royal, Milwaukee, Wis.
Patel, Harshadry R., St. Joseph, Mo.

ALABAMA

Cravens, Edward H., Tuskegee

CALIFORNIA

Fischer, Walter C., Los Angeles
Goldsmith, Joseph, Los Angeles
Happell, Leon, Stockton
Kabel, Buck, Yucaipa
Nasatir, Julius, Santa Maria
Tenkoff, Stefen, Fullerton

CONNECTICUT

Light, Herbert C., Hazardville

DISTRICT OF COLUMBIA

Bialek, Ted

FLORIDA

Castor, Frank S., Jacksonville
Nelms, Shirley Lee, Jacksonville

GEORGIA

Stevenson, Mary C., Smyrna

ILLINOIS

Baum, William H., Peoria
Billmire, W. B., Chicago
Boudreaux, Lt. Joseph C., Jr., Great Lakes
Byrne, Thomas J., Jr., Chicago
Foreman, Daniel D., Jr., Waukegan
Medlen, Robert H., Elmwood Park
Mertes, Mathias P., Jr., Lincolnwood
Murty, G. G. Krishna, Urbana
Schurman, John R., Evergreen Park
Wood, Silas S., Jr., Chicago

INDIANA

Aufderheide, Joe E., Indianapolis
Ball, James R., Fort Wayne
Bray, Malcolm D., Noblesville
James, Emory A., Jr., Indianapolis
Wallner, Marshall S., Bedford

IOWA

Hruby, Donald J., Cedar Rapids

KANSAS

Galvin, Robert E., Fort Scott

LOUISIANA

Fields, Harold L., New Orleans
Robinson, Warren P., New Orleans

MARYLAND

Flayhart, Walter F., Baltimore

MASSACHUSETTS

Arsenian, Arpy, Boston
Fleming, William E., Jr., Segregansett
Kapses, William C., Pittsfield
Kinne, Alan S., Needham
Mullan, Elizabeth J., Fitchburg

MICHIGAN

Hare, Leslie R., Oak Park
Meister, Peter D., Kalamazoo
Strong, John W., Grosse Pointe Park
Swart, Fred O., Clio
Tayler, Harold H., Jr., Detroit

MINNESOTA

Landherr, Gerald M., Rose Creek

MISSOURI

Criswell, John P., Springfield
McGreevy, W. C., Springfield
Ninas, Donald L., Independence
Summytt, E. T., St. Louis

MONTANA

Steiner, Ray C., Billings

NEBRASKA

Clayton, John D., Grand Island

NEW HAMPSHIRE

Vallas, James M., Portsmouth

NEW JERSEY

Brooks, Edward G., Bloomfield
Kearns, James A., Newark
Mina, Francis A., Princeton
Pinchak, S. Francis, Clifton
Rushchycky, Anthony, Irvington
Scala, George H., Union City
Strauss, Harold, Butler

NEW YORK

Bloom, Irving, Rochester
Cavallaro, Manuel F., Rochester
Cobrin, Jack, Rochester
Cohen, Sol, Flushing
Colucci, James R., Rochester
Conti, Vincent J., Brooklyn
Dauer, Morris, Brooklyn
Gerstner, Thomas C., Rochester
Greene, Rudolph, Long Island
Jacobson, Joseph, Rochester
Kimbriel, Harry, New York City
Korus, Marvin H., Rochester
Maus, Herman C., Frankfort
Milliman, George E., Rochester
Pachter, Irwin M., New York City
Pugatsky, Arnold, Bronx
Regner, Leonard S., Rochester
Ruggiero, Felix, Hempstead
Ryerson, H. P., Ithaca
Thorpe, F. T., Ithaca
Weiss, Moe, Brooklyn
Yaswen, William, Rochester
Young, Alexander, Rochester

OHIO

Gasson, Vernon J., Kenton
Sabino, Joseph R., Columbus
Zeidman, Stanley S., Cincinnati

OREGON

Robinson, Leslie Ann, Portland

PENNSYLVANIA

Bonchosky, Harry J., Uniontown
Lemmon, John L., Sellersville
Manzelli, Thomas A., Philadelphia
Martin, Jack E., Honesdale
Regan, Thomas M., Allentown
Richter, Norman B., Philadelphia
Sayoc, Francisca T., Philadelphia
Shaffer, Elmer K., Allentown

SOUTH CAROLINA

Flinchum, Ann H., Greenwood

Deceased Members

Ballin, E., Pleasant Hill, Calif., Jan. 10, 1956
Bigelow, Carle M., Bound Brook, N.J.
Binday, Morris L., Hempstead, N. Y., April 25, 1955
Dirstine, P. H., Spokane, Wash., Dec. 26, 1955 (Life Member)
Fackler, Hugh A., Calhoun, Ky.
Glover, William H., Lawrence, Mass., Jan. 21, 1956 (Life Member)
Grenspan, Michael J., Jackson Heights, N. Y.
Hall, Orlando G., Silver Spring, Md., July 19, 1955
Halsey, H. Randolph, New York City, Dec. 23, 1955
Hesselberg, Max, St. Louis, Mo., Feb. 8, 1956
Kaplan, Hyman C., Fleischmanns, N. Y.
Kinne, Ray E., Needham, Mass.
Koch, Julius A., Ocala, Fla., Feb. 10, 1956 (Life Member)
Mears, Richard A., Detroit, Mich., Nov. 1955
Mikkelsen, Niels, Kenesaw, Nebr., Sept. 13, 1955 (Life Member)
Muehlhause, Otto W., Baltimore, Md.
Mull, Bert R., Monticello, Ind., Jan. 31, 1956 (Life Member)
Roth, Carl A., New York City, Jan. 29, 1956
Saalbach, Louis, Pittsburgh, Pa., Nov. 15, 1955
Stam, Mrs. Donald F., Chestertown, Md., June 6, 1955
Steppig, Oliver J., St. Louis, Mo., Feb. 18, 1956

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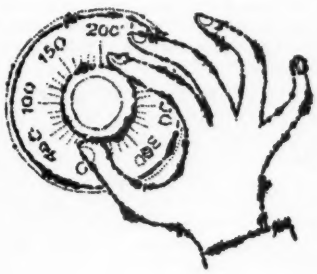

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†TRADEMARK FOR PFIZER-ORIGINATED, VITAMIN-FORTIFIED ANTIBIOTICS

Pfizer

PFIZER LABORATORIES, *Division, Chas. Pfizer & Co., Inc.*, Brooklyn 6, N. Y.

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2-day intervals for 3 doses; intravenous, 60 to 100 ml. repeated if necessary; *Range*, 20 to 100 ml.

Commercial source, Antipertussis Serum [Hypertussis] [Human] (Cutter); Pertussis Immune Serum [Human] (Milwaukee Blood Center, Inc.); Pertussis Immune Serum [Human] (Philadelphia Serum Exchange, The Children's Hospital of Philadelphia).

PHENINDAMINE TARTRATE; —TABLETS.—Phenindamine Tartrate is unique among antihistaminics in consisting mainly of the rather complex pyridindene group. It takes effect promptly and persists for a moderately long period so that dosing thrice daily is usually adequate. It has local anesthetic properties and exerts an antipruritic effect. It stands in contrast to almost all other antihistaminics in producing practically no sedation or drowsiness. Its side-effects are mild nervous stimulation which may lead to insomnia of short duration.

Category, Antihistaminic; *Usual dose*, 25 mg. up to four times a day as necessary; *Range*, 10 to 50 mg.

Commercial source, Thephorin (Hoffmann-La Roche).

PHENTOLAMINE HYDROCHLORIDE; —TABLETS.—Phentolamine Hydrochloride, which must be administered orally, acts as a potent adrenergic blocking agent, blocking both epinephrine and the effects of sympathetic nerve stimulation. It is used orally for the control and prevention of hypertension in patients with pheochromocytoma, a tumor that characteristically gives rise to excessive circulating epinephrine and/or levarterenol. It can give relief until surgical measures can be undertaken. It is also beneficial in the treatment of various peripheral vascular diseases.

Category, Sympatholytic; *Usual dose*, 50 mg. four times a day; *Range*, 50 to 100 mg.

Commercial source, Regitine Hydrochloride (Ciba).

PHENTOLAMINE METHANESULFONATE; —FOR INJECTION.—Phentolamine Methanesulfonate is the parenteral form of phentolamine.

Category, Sympatholytic; *Usual dose*, Intramuscular and intravenous, 5 mg.; *Range*, 5 to 30 mg.

Commercial source, Lyophilized Regitine Methanesulfonate Ampuls (Ciba).

PHYTONADIONE.—This is a very viscous yellow liquid which is insoluble in water. It is administered parenterally in the form of an aqueous emulsion. Phytonadione (Vitamin K_1) has prompter, more potent, and more prolonged effect than other vitamin K analogues. It can be depended on to reverse hypoprothrombinemia induced by anticoagulant therapy to safe levels whether bleeding is only potential or has actually occurred. An adequate intravenous dose of the emulsion will usually stop bleeding in 3 to 4 hours and produce a normal prothrombin level in 12 to 14 hours.

Category, Prothrombogenic; *Usual dose*, Intravenous and subcutaneous, 2 mg.; *Range*, 2 mg.; up to 100 mg. in toxicity from bishydroxycoumarin and related drugs.

Commercial source, Mephyton Emulsion (Sharp & Dohme).

PLAGUE VACCINE [N.F. IX].—This is a sterile suspension, in suitable diluent, of killed plague bacilli of a strain selected for high antigenic efficiency. It contains not less than 2 billion plague bacilli in each ml.

Category, Specific vaccine; *Usual dose*, Subcutaneous, two injections of 0.5 and 1 ml., 7 to 10 days apart.

PODOPHYLLUM [N.F. IX]; **—RESIN** [N.F. IX].—These are recognized in the U.S.P. for use as a caustic for the removal of epithelial tumors such as warts, condylomas, cutaneous horns, polypi, etc.

Category, Caustic for certain papillomas; *For external use*, Topically as a 25 per cent solution in liquid petrolatum, preferably containing up to 20 per cent of paraffin.

POLYETHYLENE GLYCOL OINTMENT.—This monograph represents a change in the U.S.P. XIV formulation. The new formula is somewhat softer in consistency due to increasing the quantity of polyethylene glycol 400 and decreasing that of polyethylene glycol 4000. The U.S.P. also includes directions for the preparation of a firmer product, if so desired. It is important to emphasize the nonionic character of this base which makes it compatible with a very wide range of drugs.

Category, Water-soluble ointment base.

POLYMYXIN B SULFATE; —TABLETS.—Polymyxin B Sulfate is an antibacterial substance produced by the growth of *Bacillus polymyxa*. It has a potency of not less than 6000 U.S.P. Polymyxin B Units per mg., calculated on the dried basis. It is bactericidal *in vitro* for most Gram-negative microorganisms. Clinical observations indicate that the development of bacterial resistance is not probable. It is used orally in the nonsystemic treatment of certain intestinal infections such as *Shigella* or *Pseudomonas enteritis*, when present as a pathogen. It is too poorly absorbed orally to warrant use by this route in the treatment of systemic infections. No toxic effects have been observed through oral use of the drug. The drug is used topically for the treatment of local infections caused by susceptible Gram-negative bacilli, especially *Pseudomonas aeruginosa*. It may be employed locally to prevent infection from Gram-negative organisms of wounds, burns, ear, eye, bone and body cavity infections.

Category, Antibiotic; *Usual dose*, 750,000 U.S.P. Units four times a day; *Range*, 500,000 to 1,000,000 Units; *For external use*, Topically as a 0.1% ointment.

Commercial source, Aerosporin Sulfate [Parenteral], Aerosporin Sulfate Sterile Powder [Topical], Aerosporin Sulfate Tablets (Burroughs Wellcome); Polymyxin B Sulfate Sterile Powder [Parenteral], Polymyxin B Sulfate Sterile Powder [Topical], Polymyxin B Sulfate Tablets (Pfizer).

POLYOXYL 40 STEARATE.—Polyoxyl 40 Stearate is a nonionic surfactant emulsifier which is being used to replace the sodium lauryl sulfate in the new formulation for Hydrophilic Ointment. Sodium lauryl sulfate was replaced primarily due to the possible incompatibilities with cationic medicaments. The nonionic nature of the Polyoxyl 40 Stearate eliminates this possibility and has shown no untoward effects on the skin. The new product is smoother, has better slip, and rubs into the skin better than the former Hydrophilic Ointment.

Category, Pharmaceutic necessity for Hydrophilic Ointment.

Commercial source, Myrj 52 (Atlas Powder Co.).

POTASH, SULFURATED [N.F. IX].—Sulfurated Potash is required for White Lotion.

Commercial source, Mallinckrodt, Merck.

POTASSIC SALINE INJECTION, LACTATED.—This is a sterile solution of potassium chloride, sodium chloride, and sodium lactate in water for injection. It is commonly known as "Darrow's Solution," which is recognized as the official synonym. The product is used parenterally in the treatment of dehydration and acidosis associated with potassium deficiency (particularly that resulting from severe diarrhea). Because of its potassium content and the necessity for caution in administration, it should not be employed promiscuously for restoration of fluid. The solution should be employed only when the kidneys are functioning and after initial treatment of shock to insure adequate circulation.

Category, Fluid and electrolyte replenisher; *Usual dose*, Subcutaneous and intravenous, 40 to 100 ml. per Kg.

Commercial source, Solution Potassic Saline [Darrow] (Don Baxter, Inc.).

POTASSIUM CHLORIDE INJECTION.—This is a sterile solution of potassium chloride in water for injection. This preparation is used for replacement of potassium in potassium deficiency states. This deficiency may result from low potassium intake, disproportionately high intake of sodium, chloride or dextrose during parenteral fluid administration, excessive potassium loss as in persistent vomiting, diarrhea, starvation, severe trauma, and some cases of renal failure.

Dosage is critical and must be regulated according to the cause of hypopotassemia and by the clinical response.

Category, Electrolyte replenisher; *Usual dose*, Intravenous, 250 mg. to 2 Gm. slowly as an infusion.

Commercial source, Potassium Chloride Ampuls [2 mEq/ml.] (Abbott, Lilly).

POTASSIUM PERMANGANATE TABLETS [N.F. IX].—While potassium permanganate has had U.S.P. status, this is the first time a dosage form has been admitted.

Category, Anti-infective (oxidant); *For external use*, Topically as a 1 in 500 to 1 in 10,000 solution as required.

PRIMAQUINE PHOSPHATE; —TABLETS.—Primaquine Phosphate is an antimalarial which eradicates resistant forms of malaria involving tissue (exo-erythrocytic) infection. When used in conjunction with chloroquine phosphate, it has been shown to be effective in preventing relapses in nearly all cases of vivax malaria. When used in this way the chloroquine phosphate destroys the erythrocytic parasites and terminates the paroxysm, while the Primaquine Phosphate eradicates the exo-erythrocytic parasites.

Category, Antimalarial; *Usual dose*, 26.5 mg. (15 mg. of base) daily for 14 days; *Range*, 17.5 to 26.5 mg. (10 to 15 mg. of base).

Commercial source, Primaquine Phosphate (Winthrop).

PROCAINAMIDE HYDROCHLORIDE; —CAPSULES; —INJECTION.—Procainamide Hydrochloride, like procaine hydrochloride, depresses the irritability of the ventricular muscle. Unlike procaine hydrochloride, procainamide is hydrolyzed only slightly by plasma enzymes to para-aminobenzoic acid and diethylaminoethylamine so that its effect is more prolonged. It differs from procaine also in having little central stimulatory effects. The therapeutic action occurs almost immediately after intravenous administration, whereas it may be delayed almost one hour after oral administration. The drug is almost completely absorbed from the gastrointestinal tract. It is useful in the treatment of ventricular and auricular arrhythmias and extra systoles occurring in either cardiac diseases or during general anesthesia. When administered intravenously the drug produces a slight hypotensive effect which is partially due to vasodilatation.

Category, Cardiac depressant; *Usual dose*, Oral, 1.5 Gm. four times a day; intravenous, 1 Gm.; *Range*, Oral, 500 mg. to 1.5 Gm.; intravenous, 250 mg. to 1 Gm.

Commercial source, Pronestyl Hydrochloride Capsules, Pronestyl Hydrochloride Parenteral Solution (Squibb).

PROGESTERONE SUSPENSION, STERILE.—This is a sterile, aqueous suspension of progesterone which is practically insoluble in water and only sparingly soluble in vegetable oils. U.S.P. XV still recognizes the solution in oil as Progesterone Injection. Progesterone induces secretory changes of the endometrium, stimulates growth of the mammary alveolar tissue and relaxes the uterine smooth muscle. It is of value in the treatment of functional uterine bleeding. The aqueous suspension is usually administered subcutaneously.

Category, Progestational hormone; *Usual dose*, Intramuscular, 25 mg.; *Range*, Intramuscular, 5 to 50 mg.

Commercial source, Progesterone Aqueous Suspension (available from many sources); Syngesterone (Pfizer); Lipo-Lutin Aqueous (Parke, Davis).

PROPYLHEXEDRINE; —INHALANT.—Propylhexedrine is closely related to amphetamine and similar volatile sympathomimetic amine compounds. It produces vasoconstriction and a decongestant effect on the nasal mucous membranes. It has only about one-half the pressor effect of amphetamine and produces decidedly less stimulation of the central nervous system. It is useful for its local shrinking effect upon the nasal mucosa in the symptomatic relief of nasal congestion caused by the common cold, allergic rhinitis or sinusitis. Due to its volatility, it may be applied by inhalation, thus reaching areas sometimes inaccessible to liquid forms of medication. It has a wide margin of safety and is relatively free from toxic side-effects.

Category, Sympathomimetic, local vasoconstrictor; *Application*, By inhalation as required.

Commercial source, Benzedrex Inhaler (S.K.F.).

PROTEIN HYDROLYSATE INJECTION.—This is a sterile solution of amino acids and short-chain peptides which represent the approximate nutritive equivalent of the casein, lactalbumin, plasma, fibrin, or the protein from which it is derived by suitable hydrolysis. It may be modified by partial removal and restoration or addition of one or more amino acids. It may contain dextrose or other carbohydrate suitable for intravenous infusion. Not

less than 50% of the total nitrogen present is in the form of α-amino nitrogen.

The primary purpose of Protein Hydrolysate Injection is to supply dietary nitrogen in readily assimilable form in cases of serious interference with intake, digestion or absorption of dietary protein. The requirement that not less than 50% of the nitrogen be present in the form of α-amino nitrogen is to insure that hydrolysis is complete enough to guard against antigenicity. The dextrose is a source of calories so that the hydrolyzed protein is spared for body protein synthesis. The Injection is used generally in debilitating illness and after surgery of the alimentary tract.

Category, Parenteral nutrient; *Usual dose*, Intravenous, 500 ml.; *Range*, 250 to 1000 ml.

Commercial source, Aminosol Solution 5%, Aminosol Solution 5% with Dextrose 5%, Aminosol Solution 5% with Dextrose 5% and Sodium Chloride 0.3% (Abbott); Hyprotigen Solution 6%, Hyprotigen Solution 6% with Dextrose 5% (Don Baxter, Inc.); Travamin Solution 5%, Travamin Solution 5% with Dextrose 5% (Baxter Labs., Inc.); Amigen Solution 3.33% with Dextrose in Lactated Ringer's Solution, Amigen Solution 5% with Dextrose 10%, Amigen Solution 5% with Levugen 10%, Amigen Solution 10% (Mead Johnson & Co.); Parenamine Solution 6%, Parenamine Solution 15% (Winthrop).

PYRATHIAZINE HYDROCHLORIDE; —TABLETS.—Pyrathiazine is a substituted phenothiazine. Its antihistaminic effect shows an onset of action in 15 to 30 minutes, with a duration of 5 to 6 hours. It falls into the "intermediate" group with respect to incidence of side-effects. Severe nausea, severe dizziness and marked drowsiness have been reported in the literature.

Category, Antihistaminic; *Usual dose*, 50 mg. up to four times a day; *Range*, 50 to 100 mg.

Commercial source, Pyrrolazote (Upjohn).

PYRIDOXINE HYDROCHLORIDE.—Pyridoxine Hydrochloride is commonly known as vitamin B_6. Its need in human nutrition has only recently been established, but as yet no minimum daily requirement has been established. It may be of value as an adjunct in the treatment of nausea and vomiting of pregnancy and in irradiation sickness.

Category, Vitamin-B complex vitamin; *Usual dose*, 5 mg.

Commercial source, Hexabetalin (Lilly); Hexavibex (Parke Davis). It is also available from many sources under its official title.

PYRILAMINE MALEATE; —TABLETS.—This antihistaminic is an ethylenediamine derivative and is closely related to tripelennamine. Like the latter, it has local anesthetic properties which suggest certain precautions in giving it to patients who might chew the tablets. Its side-effects are sufficiently mild to permit its being distributed without prescriptions. Its principal usefulness is in treating minor allergies rather than asthma, dermatitis and eczema.

Category, Antihistaminic; *Usual dose*, 25 mg. up to four times a day; *Range*, 25 to 50 mg.

Commercial source, Copsamine (Durst); Harv-Amine (Harvey); Neo-Antergan (Sharp & Dohme); Paraminyl Maleate (Buffington's, Inc.); Pyra-Maleate (Vanpelt & Brown); Pyramal Maleate (The Columbus Pharmacal Co.); Stangen Maleate (Physicians' Drug & Supply Co.); Statomin Maleate (Bowman Bros. Drug Co.); Thylogen Maleate (Wm. H. Rorer, Inc.). It is also available from many sources under its official title.

RESERPINE.—Reserpine is a crystalline alkaloid extracted from *Rauwolfia serpentina*, and more recently from other species of *Rauwolfia*.

The prime action of the alkaloid is a sedative effect accompanied by a feeling of well-being and general relaxation. This so-called tranquilizing action has been utilized in the treatment of certain neurotic and psychiatric patients. Its sedative effect differs from that of the barbiturates in that it does not induce sleep, nor does it act as an antagonist to convulsant poisons.

Accompanying the sedation, there may be a moderate lowering of blood pressure in hypertensive patients. The hypotension is usually accompanied by a decrease of the heart rate. The drug is often combined with other more potent hypotensive agents.

Following oral administration there may be a delay of up to one week before the effects of this drug become apparent, and they persist for 2 to 3 weeks after withdrawal.

The exact incidence and nature of the side-effects is still a matter of clinical study.

Category, Central depressant, tranquilizer; *Usual dose*, Oral, 0.5 mg.; *Range*, 0.25 to 1.5 mg.

Commercial source, Crystoserpine (Smith-Dorsey); Rau-Sed (Squibb); Reserpoid (Upjohn); Sandril (Lilly); Serfin (Parke, Davis); Serpanray (Panray); Serpasil (Ciba); Serpiloid (Riker); Serpine (Pitman-Moore); Roxinoid (Sharp and Dohme); Serolfia (Ascher); Serpen (Haag); and under the official title from many sources.

RINGER'S INJECTION; —SOLUTION.—These two monographs are the result of dividing the monographs on Ringer's Solution U.S.P. XIV. The Injection was formerly known as Ringer's Solution No 3, and the present solution was Ringer's Solution No.1.

Category, Injection—Fluid and electrolyte replenisher; *Usual dose*, Intravenous, 500 ml.; *Range*, 500 to 1000 ml. *Category, Solution*—A physiological salt solution; *For external use*, topically as required.

SALICYLIC ACID COLLODION [N.F. IX].—Except for a slight change in title, the N.F. IX monograph for Salicylic Collodion was carried over.

Category, Keratolytic; *For external use*, Topically as required.

SECOBARBITAL SODIUM; —CAPSULES.—Secobarbital Sodium is a short-acting barbiturate which takes effect within one-half hour and wears off within 4 to 6 hours. It is effective for simple insomnia where the difficulty is in getting to sleep rather than remaining asleep. It is often used in obstetrics and for preanesthetic sedation.

Category, Central depressant; *Usual dose*, 100 mg. up to three times a day; *Range*, 50 to 200 mg.

Commercial source, Evronal Sodium Capsules (Evron Co.); Seconal Sodium Capsules & Powder (Lilly). It is also available from several sources under its official title.

SILVER NITRATE, TOUGHENED [N.F. IX].—It is recognized in the U.S.P. for its use in cauterization.

Category, Caustic; *For external use,* Topically as required.

SOAP, MEDICINAL SOFT, LINIMENT [N.F. IX].—Except for a change in the title, Soft Soap Liniment, the N.F. IX monograph has been carried over.

Category, Detergent, local irritant; *For external use,* Topically to skin.

SODIUM ACETRIZOATE INJECTION.—This is a sterile solution of the sodium salt of acetrizoic acid in water for injection prepared by reaction with sodium hydroxide.

It is employed as a contrast medium both intravenously in urography and angiocardiography, and by instillation for retrograde pyelography. Patients receiving it in urography should be prepared by restricting their fluid intake for several hours prior to examination since this favors greater concentration of the drug. Preparation of the patient includes clearing the gastrointestinal tract by enemas and laxatives, preferably with castor oil. Although sodium acetrizoate contains a greater amount of iodine than do other similar agents, studies thus far indicate that it is less toxic.

Category, Radiopaque medium (urographic); *Usual dose,* Intravenous, 25 ml. of a 30% solution; *Range,* 5 ml. of a 30% to 50 ml. of a 70% solution.

Commercial source, Urokon Sodium Solution (Mallinckrodt Chem. Works).

SODIUM AMINOSALICYLATE; —TABLETS.—Sodium Aminosalicylate is used in the same manner and for the same conditions as is aminosalicylic acid. It should be noted that the U.S.P. cautions: "*Prepare Solutions of Sodium Aminosalicylate within 24 hours of administration. Under no circumstances use a solution if its color is darker than that of a freshly prepared solution.*"

Category, Antibacterial (tuberculostatic); *Usual dose,* 3 Gm. five times a day; *Range,* 2 to 4 Gm.

Commercial source, Parapas Sodium (Gold Leaf); Parasal Sodium (Panray); Pamisyl Sodium (Parke, Davis); Pasara Sodium (Dorsey); Pasem Sodium (Massengill); Pasmed Sodium (Intermedico Corp.); Sodium Para-aminosalicylate (available from many sources).

SODIUM CARBONATE, MONOHYDRATED [N.F. IX].—Sodium Carbonate is recognized by the U.S.P. for the preparation of the sodium stearate required in glycerin suppositories.

Category, Pharmaceutic necessity for Glycerin Suppositories.

SODIUM CARBOXYMETHYLCELLULOSE.—This is the sodium salt of a polycarboxymethyl ether of cellulose, which is recognized as an emulsifying agent. It occurs as a white powder or granule, and is easily dispersed in water to form colloidal solutions. It is insoluble in alcohol, in ether, and in most other organic solvents. It is an anionic compound and therefore can be used as a thickening or stabilizing agent for ointments having an anionic or nonionic type of emulsifying agent. It is an efficient suspending agent and has been recommended for use in many experimental formulas for Calamine Lotion.

Category, Emulsifier.

Commercial source, CMC (Hercules Powder Co.).

SODIUM CHLORIDE INJECTION.—This represents Isotonic Sodium Chloride Solution No. 3, U.S.P. XIV. The provision of a separate monograph should eliminate much confusion on the proper use of the solutions.

Category, Fluid and electrolyte replenisher; *Usual dose,* Intravenous, 500 ml.; *Range,* 500 to 5000 ml.

SODIUM CHLORIDE SOLUTION.—The monograph on this Solution represents that portion of the U.S.P. XIV monograph which applied to Isotonic Sodium Chloride Solution No. 2. The monograph still cautions: "*Do not use Sodium Chloride Solution for parenteral administration or in preparations to be used parenterally. For such purposes, use Sodium Chloride Injection.*"

Category, A physiological salt solution; *For external use,* Topically as required.

SODIUM FLUORIDE.—Sodium Fluoride is recognized for its use in drinking water as prophylaxis against dental caries. Although excessive intake of fluoride ion causes a mottled appearance of the enamel of the teeth, the use, according to the official dosage, makes such an occurrence highly unlikely. The U.S.P. cautions: "*Sodium Fluoride is very poisonous. When acidified, Sodium Fluoride yields hydrofluoric acid, which is also a very poisonous substance.*"

Category, Dental prophylactic; *Usual dose,* 0.7 to 1 part per million in drinking water.

Commercial source, Sodium Fluoride Powder (Merck, Mallinckrodt, and others).

SODIUM HYDROXIDE [N.F. IX].—Sodium Hydroxide is recognized in the U.S.P. for its possible use in the preparation of sodium stearate to be used in glycerin suppositories. Of course, it has other valuable purposes in pharmacy.

Category, Pharmaceutic necessity for Glycerin Suppositories.

SODIUM INDIGOTINDISULFONATE [N.F. IX]; **—INJECTION** [N.F. IX].—Sodium Indigotindisulfonate (Indigo Carmine) is a dye used for kidney function tests. The rate of excretion of the dye in the urine after intravenous injection is determined colorimetrically. It colors the urine blue and it is generally advisable to call this to the patient's attention.

Category, Diagnostic aid (renal function); *Usual dose,* Intravenous, 40 mg.; *Range,* 40 to 80 mg.

Commercial source, Indigo Carmine Solution (Assoc. Phys. Labs. of Calif., Gotham Pharm Co., H.W. & D., Kirk, Rorer, Torigian Labs.).

SODIUM RADIO-IODIDE (I^{131}) SOLUTION.—Sodium Radio-iodide (I^{131}) Solution contains iodine-131 suitable for either oral or intravenous administration. Iodine-131 is a radioactive isotope of iodine presented as sodium iodide derived from the products of uranium fission in such manner that it is essentially "carrier-free" and contains only minute amounts of naturally occurring iodine-127. Sodium Radio-iodide (I^{131}) Solution contains a suitable bacteriostatic agent.

The labeled amount of I^{131} as iodide is expressed in microcuries or millicuries at the time indicated in the labeling. Iodine-131 activity as iodate does not exceed 5% of the iodide activity. Other chemical forms of radioactivity are absent.

The U.S.P. cautions: "*Dosage calculations must take into account radioactive decay. The half-life*

of Iodine-131 is 8.0 days. To prevent the I^{131} from being adsorbed, all containers used to handle Sodium Radio-iodide (I^{131}) Solution should be previously rinsed with a solution containing approximately 0.80 per cent of sodium hydroxide, 0.04 per cent of sodium bisulfite, and 0.25 per cent of sodium iodide followed by rinsing with purified water until the last rinsing is neutral to litmus."

The product is used in the form of solution freshly prepared from the radioactive isotope of appropriate concentration for diagnostic studies in patients with suspected thyroid disease, for treatment of selected cases of thyrotoxicosis and, in conjunction with other agents and methods, for the palliative treatment of carcinoma of the thyroid gland and metastatic lesions arising from it. It is used also to detect distant metastatic growths of thyroid carcinoma and to determine whether intact tissue or a tumor mass is of thyroidal origin. It may be used to induce hypothyroidism in euthyroid patients with angina pectoris to aid in the management of that condition. It should be noted that uptake of radio-iodine may be depressed by prior intake of stable iodine in any form or by the use of thyroid substance or of antithyroid drugs.

Category, Diagnostic aid and therapeutic agent; *Dose range*, Tracer, 1 to 100 microcuries; therapeutic, 1 to 100 millicuries.

Commercial source, Diagnostic Solution Sodium Radio-iodide (I^{131}), Therapeutic Solution Sodium Radio-iodide (I^{131}) (Abbott).

SODIUM RADIO-PHOSPHATE (P^{32}) SOLUTION.—Sodium Radio-phosphate (P^{32}) Solution contains phosphorus-32 presented as sodium phosphate suitable for either oral or intravenous administration. Phosphorus-32 is a radioactive isotope of phosphorus derived from neutron bombardment of elemental sulfur. Inactive sodium phosphate carrier may be added during the processing. The solution contains a suitable bacteriostatic agent.

The labeled amount of P^{32} as phosphate is expressed in microcuries or millicuries at the time indicated in the labeling.

The U.S.P. cautions: "*Dosage calculations must take into account radioactive decay. The half-life of phosphorus-32 is 14.3 days. To prevent the P^{32} from being adsorbed, all containers used to handle Sodium Radio-phosphate (P^{32}) Solution should be previously rinsed with a solution containing 0.10 per cent of sodium hydroxide followed by rinsing with purified water until the last rinsing is neutral to litmus.*"

Following the administration of phosphorus-32, large amounts are deposited in bone and bone marrow. This leads to its use in the treatment of polycythemia vera, and a high degree of success has been reported in reducing the excessive numbers of red blood cells seen in this disease. It has also been used successfully in the treatment of myeloid leukemia, lymphomas and widespread carcinomatosis.

As a diagnostic agent, it is used for determination of blood volume with red blood cells labeled *in vitro;* in the study of peripheral vascular disease; for localization of brain tumor; and in the study of carcinomas of the breast.

Solutions of Sodium Radio-phosphate (P^{32}) are generally available in small volumes containing 0.5 to 7 millicuries, as ordered for the individual needs of the patient. On standing, both the solution and the glass container may darken as a result of the effects of radiation.

Category, Diagnostic aid and therapeutic agent; *Dose range*, Tracer, 1 to 500 microcuries; therapeutic, 1 to 7 millicuries.

Commercial source, Diagnostic (or Therapeutic) Solution Sodium Radio-phosphate (P^{32}) (Abbott).

STEARIC ACID [N.F. IX].—This is included in the U.S.P. for the preparation of sodium stearate to be used in glycerin suppositories. It is useful in many cosmetic formulations.

Category, Pharmaceutical necessity for Glycerin Suppositories.

STREPTODUOCIN FOR INJECTION.—This is a mixture of approximately equal parts dihydrostreptomycin sulfate and streptomycin sulfate. The product has the same actions and uses as its individual components. By using half the quantity of the dihydrostreptomycin and half the quantity of streptomycin required if used alone, there is a consequent reduction in auditory damage caused by the dihydro derivative and of vestibular damage caused by the streptomycin. The total dosage of the mixture in terms of streptomycin base should not exceed the recommended dose for either of the components when used singly. The mixture cannot be used in patients sensitive to either streptomycin or dihydrostreptomycin. It also may sensitize patients to both components simultaneously. The product is contraindicated in meningitis.

Category, Antibiotic; *Usual dose*, Intramuscular, 500 mg. daily; *Range*, 500 mg. to 1 Gm.

Commercial source, Combistrep (Pfizer); Dihydrostreptomycin-streptomycin for Injection (Parke, Davis); Distreptocin, Distreptocin Solution (Lilly); Distrycin, Distrycin Solution (Squibb); Duo-Strep (Merck); Mutamycin (Bristol).

STREPTOMYCIN SULFATE; —INJECTION.—The U.S.P. XIV monograph on Streptomycin was unspecific as to the salt, but stated that the base was unavailable. In U.S.P. XV, the entire monograph is devoted to the sulfate which now is the form most widely used. The drug is used in selected cases of tuberculosis, as well as for other susceptible Gram-positive and Gram-negative organisms.

Category, Antibiotic; *Usual dose*, Intramuscular, 500 mg. of base daily; *Range*, 500 mg. to 1 Gm.

Commercial source, Streptomycin Sulfate (available from many sources).

SUCCINYLCHOLINE CHLORIDE; —INJECTION.—This is a myoneural blocking agent that produces a skeletal muscle relaxant effect. It is used to produce muscle relaxation during surgical procedures, in conjunction with electro-shock therapy for endotracheal intubation, endoscopic examinations and orthopedic manipulations. In contrast with tubocurarine chloride, succinylcholine chloride is not anatagonized by anticholinesterases. Relaxation is of short duration, generally persisting for about two minutes. Sustained relaxation may be obtained by variation of the method of administration.

Category, Skeletal muscle relaxant; *Usual dose*, Intravenous, 20 mg.; *Range*, 10 to 40 mg.

Commercial source, Anectine Chloride Solution (Burroughs Wellcome); Sucostrin Chloride Solution (Squibb); Quelicin Chloride Solution (Abbott).

SULFACETAMIDE; —TABLETS.—Sulfacetamide has a greater antibacterial activity against Gram-positive cocci than against Gram-negative bacilli, but it has a considerable effect against certain species of the latter group. Its range of usefulness is similar to that of the pyrimidines. It is readily absorbed from the gastrointestinal tract and is excreted primarily in the urine, in which both free and conjugated forms are found. Because of its high solubility and ready elimination, it has found considerable use in urinary tract infections since it is possible to maintain high urinary concentrations without danger of kidney damage.

Category, Antibacterial; *Usual dose,* Initial, 4 Gm.; maintenance, 1 Gm. every 4 hours; *Range,* 500 mg. to 4 Gm.

Commercial Source, Sulamyd Tablets (Schering); Sulfacetamide Powder (Mann Fine Chem.).

SULFACETAMIDE SODIUM; —OINTMENT; —SOLUTION.—The sodium salt is highly soluble at the physiologic *p*H of 7.4; therefore it is especially suited, as a solution, for repeated topical application in the local management of ophthalmic infections susceptible to sulfonamide therapy. Local sensitivities frequently noted with other sulfonamides rarely are encountered with sulfacetamide sodium. The sodium salt is utilized for the preparation of ophthalmic ointments as well as ophthalmic solutions. The product should not be used with silver preparations. [Solutions are often buffered with 0.2% sodium dihydrogen phosphate and preserved with 0.15% sodium thiosulfate and 0.05% methylparaben and 0.01% propylparaben. The sodium thiosulfate acts as a reducing agent to prevent oxidative discoloration.]

Category, Antibacterial; *For external use,* Topically to eye as a 10% ointment or 1 to 2 drops of a 30% solution every 2 to 4 hours.

Commercial source, Sodium Sulamyd Ophthalmic Ointment, Sodium Sulamyd Ophthalmic Solution (Schering).

SULFAMETHAZINE.—Sulfamethazine is more soluble in acid urine than the other pyrimidine derivatives. This decreases the possibility of kidney damage from the use of the drug. The U.S.P. recognizes this compound for use in the preparation of Oral Trisulfapyrimidines Suspension and Trisulfapyrimidines Tablets.

Category, Antibacterial, pharmaceutical necessity for Oral Trisulfapyrimidines Suspension and Trisulfapyrimidines Tablets.

Commercial source, Sulfamethazine Tablets (Sharp & Dohme).

SULFAPYRIDINE (N.F. IX); **—TABLETS** [N.F. IX].—Sulfapyridine is recognized in the U.S.P. for use in dermatitis herpetiformis. To minimize the risk of kidney damage, sulfapyridine should be given with fluids to keep the urinary output at a high level.

Category, Anti-infective (dermatitis herpetiformis); *Usual dose,* 500 mg. one to three times a day; *Range,* 500 mg. to 1 Gm.

Commercial source, Sulfapyridine Powder (Mallinckrodt, Merck); Sulfapyridine Tablets (Lilly, Parke Davis).

SULFISOXAZOLE; —TABLETS.—Because of its relatively high solubility in body fluids, this product and its acetyl derivative (which is coming into use) are less likely to produce crystalluria and renal blocking than less soluble sulfonamide derivatives employed singly. It shares the actions and uses of other sulfonamide derivatives and aside from its solubility, it has the same potentiality for toxic reactions.

Category, Antibacterial; *Usual dose,* Initial, 4 Gm.; maintenance, 1 Gm. every 4 hours.; *Range,* 500 mg. to 6 Gm.

Commercial source, Gantrisin Powder, Gantrisin Tablets (Hoffmann-La Roche).

SULFOXONE SODIUM; —TABLETS.—Sulfoxone Sodium is indicated in the treatment of leprosy. Lesions usually do not progress after therapy has begun, although not all cases respond favorably. It takes effect slowly and at least 6 months are required to evaluate its benefits in a given case.

Category, Antibacterial (leprostatic); *Usual dose,* 300 mg. daily; *Range,* 300 to 900 mg.

Commercial source, Diasone Sodium Tablets (Abbott).

TESTOSTERONE SUSPENSION, STERILE.—This is a suspension of testosterone in an aqueous medium, a form which acts with slightly lesser intensity and a slightly greater duration than testosterone propionate. The product is primarily useful in treating deficiencies of testicular hormone in the male. The aqueous form affords advantages in handling, *i.e.,* cleaning of syringes, etc., and avoidance of side-effects resulting from use of an oil menstruum.

Category, Androgenic hormone; *Usual dose,* Intramuscular, 25 mg. daily or three times a week. *Range,* Intramuscular, 10 to 75 mg.

Commercial source, Andrusol (C. D. Smith); Andronaq (Central); Androlin Aqueous Suspension (Lincoln); Malestrone (Kirk); Mertestate (Breon); Neo-Hombreol F (Organon); Oreton F (Schering); Testandrone (G. W. Carnrick); Testobase Aqueous (Sharp & Dohme); Testosteroid (Sherman); Testryl (Squibb); Synandrol-F (Pfizer). It is also available from many sources under its official title.

TETANUS TOXOID, ALUMINUM HYDROXIDE ADSORBED.—This is a sterile suspension of tetanus toxoid adsorbed on aluminum hydroxide from a formaldehyde-treated solution of the products of growth of the tetanus bacillus (*Clostridium tetani*). An explanation of the use of the aluminum hydroxide in this product is offered above under Aluminum Hydroxide Adsorbed Diphtheria and Tetanus Toxoids. The product stimulates formation in high titer of specific antibodies to tetanus toxin, producing active immunization which will confer protection.

Category, Specific immunizing agent; *Usual dose,* Hypodermic, two injections of 0.5 or 1 ml., as specified in the labeling, 4 to 6 weeks apart.

Commercial source, Tetanus Toxoid, Alhydrox (Cutter).

TETRACAINE HYDROCHLORIDE INJECTION.—This is a sterile solution of tetracaine hydrochloride in water for injection. The drug has been recognized previously, while the Injection is new. Tetracaine hydrochloride is a long-acting anesthetic that is more effective than cocaine topically, and superior to procaine as a surface anesthetic for mucous

membranes and the eye in that it does not cause mydriasis or cycloplegia and does not raise intraocular pressure. After spinal or caudal injection, it provides anesthesia of $1^1/_2$ hours or more in duration, thus reducing the number of injections when continuous or intermittent techniques are used. It exerts profound, prolonged effects with nerve block anesthetic methods and is useful for topical anesthesia of the eye, nose, throat, skin and rectal area.

Category, Local anesthetic; *Usual dose,* Intraspinal, 2 to 15 mg. as a 0.5% solution; infiltration, 0.1 to 0.25% solution; *Range,* Intraspinal, 2 to 20 mg.; *For external use*—topically as a 0.5% solution in eye; as a 2% solution in nose and throat.

Commercial source, Pontocaine Hydrochloride Injection (Winthrop).

TETRACYCLINE; —SUSPENSION, ORAL.—Tetracycline is a broad spectrum antibiotic isolated from the elaboration products of certain *Streptomyces* species when the organism is grown on suitable culture media. It is also prepared by the catalytic substitution of hydrogen for chlorine in chlortetracycline. It differs from oxytetracycline in having one less hydroxyl group. Tetracycline, the base, has the same broad spectrum as tetracycline hydrochloride, chlortetracycline and oxytetracycline.

The oral suspension may be either the base, hydrochloride or a suitable salt of tetracycline suspended in suitable, harmless dispersing and flavoring agents.

Category, Antibiotic; *Usual dose,* 250 mg. four times a day; *Range,* 50 mg. to 1 Gm.

Commercial source, Achromycin [Oral Suspension, Syrup, Pediatric Drops] (Lederle); Panmycin [Readimixed, Readimixed 125, Drops] (Upjohn); Polycycline [Aqueous 125, Pediatric] (Bristol); Steclin [Oral Suspension, Pediatric Drops] (Squibb); Tetracyn [Oral Suspension, Drops] (Pfizer).

TETRACYCLINE HYDROCHLORIDE; —CAPSULES; —TABLETS.—Tetracycline hydrochloride has the same actions and uses as its base. Although microorganisms resistant to chlortetracycline or oxytetracycline tend to be resistant to tetracycline also, clinical studies have shown that tetracycline may be effective after treatment with the others has proved ineffective. No antifungal activity has been demonstrated for tetracycline. Incidence of side reactions is generally less frequent than with chlortetracycline or with oxytetracycline.

Category, Antibiotic; *Usual dose,* 250 mg. four times a day; *Range,* 50 mg. to 1 Gm.

Commercial source, Achromycin [Capsules, Tablets, Soluble Tablets, Spersoids, Intramuscular Ampul, Intravenous Ampul] (Lederle); Panmycin [Capsules, Aqueous Injection—I.M.] (Upjohn); Polycycline [Capsules, Intramuscular Ampul] (Bristol); Steclin [Capsules, Intramuscular Ampul, Intravenous Ampul] (Squibb); Tetracyn [Tablets, Intramuscular Ampul, Intravenous Ampul] (Pfizer).

THENYLDIAMINE HYDROCHLORIDE; —TABLETS.—This antihistaminic is isomeric with methapyrilene, the sole difference being the position of the sulfur atom in the 5-membered thenyl ring. It has a prompt onset of action and a duration of 6 to 12 hours. It causes some sedation and falls into an intermediate place in this respect.

Category, Antihistaminic; *Usual dose,* 15 mg. up to six times a day; *Range,* 15 to 30 mg.

Commercial source, Thenfadil Hydrochloride Tablets (Winthrop).

THIAMINE MONONITRATE.—Thiamine Mononitrate is used interchangeably with the hydrochloride but is said to offer some pharmaceutical advantages (stability), also higher thiamine content (3%).

Category, Vitamin-B complex vitamin; *Usual dose,* Oral and subcutaneous (daily), requirement—in pregnancy, 2 mg.;—therapeutic, 2 to 50 mg.

Commercial source, Powder (Merck).

THONZYLAMINE HYDROCHLORIDE; —TABLETS.—Thonzylamine is an ethylenediamine derivative having chemical features in common with pyrilamine, the difference being a pyrimidyl substitution for the pyridyl radical. It is relatively low in potency compared with other antihistaminics. While it produces some drowsiness, vertigo and nervous tension, it ranks in the "low" group as to side-effects. Thonzylamine Hydrochloride is considered safe enough to be distributed without prescriptions, commonly in the form of remedies for the common cold.

Category, Antihistaminic; *Usual dose,* 50 mg. up to four times a day; *Range,* 25 to 100 mg.

Commercial source, Neohetramine Hydrochloride (Nepera); Anahist (Anahist Co.).

TOLAZOLINE HYDROCHLORIDE; —TABLETS.—This is a potent peripheral vasodilator and sympathetic blocking agent which rapidly induces dilatation of peripheral blood vessels and increases blood flow. The drug is as effective orally as it is parenterally, except for the time of onset and maximum response. Effectiveness is enhanced by keeping the patient warm. The drug is useful in improving circulation in patients with intermittent claudication, Buerger's disease, Raynaud's disease, stasis ulcers, thrombophlebitis, saphenous vein ligation, and frost bite sequelae.

Category, Sympatholytic, vasodilator; *Usual dose,* 50 mg. four times a day; *Range,* 50 to 75 mg.

Commercial source, Priscoline Hydrochloride Tablets (Ciba).

TORULA YEAST, DRIED.—This new admission represents mainly the recognition of dried yeast as a supplemental source of protein rather than of vitamins that can be obtained more readily by chemical synthesis. Dried Torula Yeast, which is obtained by growing *Candida* (*torulopsis*) *utilis* yeast on wood pulp wastes, closely resembles Dried Yeast in protein and vitamin content and has the advantage of blandness of taste. Its cost of production is substantially below that of Dried Yeast regardless of whether the latter is derived by primary growth or from debittered brewers yeast.

Category, Supplemental source of protein; *Usual dose,* 10 Gm. four times a day; *Range,* 1 to 10 Gm.

TRIMETHADIONE SOLUTION.—Trimethadione, its capsules and tablets, have been recognized previously. The solution is a new entry in the U.S.P. Trimethadione is primarily an anticonvulsant drug with only minor analgetic properties. It is principally effective in epileptic seizures of the true petit mal type, with results in this condition better in children than in adults. It is ineffective in grand mal.

Category, Anticonvulsant; *Usual dose,* 300 mg. three to six times a day; *Range,* Up to 300 mg.

Commercial source, Tridione Solution (Abbott).

TRISULFAPYRIMIDINES SUSPENSION ORAL; TRISULFAPYRIMIDINES TABLETS.—Oral Trisulfapyrimidines Suspension (and Tablets) consist of sulfadiazine, sulfamerazine and sulfamethazine, usually in equal amounts. The suspension may contain either sodium citrate or sodium lactate and may contain a suitable antibacterial agent. The mixture has essentially the same actions and uses as the individual sulfonamides. The mixtures were developed on the premise that efficacy is retained while the tendency for crystals to form in the urine is lessened and the toxicity to renal tubules decreased. Danger of damage to the kidneys during use of these agents is diminished because each sulfonamide is present in less concentration than when used alone, and renal excretion of each sulfonamide proceeds independently of the others present. The therapeutic efficacy of the mixtures, however, is that of the sum of the components.

Category, Antibacterial; *Usual dose*, Initial, 4 Gm. (of trisulfapyrimidines); maintenance, 1 Gm. every 4 hours; *Range*, 500 mg. to 4 Gm.

Commercial source, Metha-Merdiazine (McNeil); Multazine (Kremers-Urban); Neotrizine (Lilly); Palatrizine (Columbus); Ray-tri-mides (Raymer); Sulfaloid (Lloyd & Dabney); Sulfa-Ter (American); Sulfa-tri-azine (Thompson); Sulfa-Trio (Rexall); Sulfatryl (Wampole); Sulfose Susp. (Wyeth); Syrasulfas (Upjohn); Terfonyl (Squibb); Tersulfas (Boyle); Trifonamide (Vanpelt & Brown); Trionamide (Flint, Eaton); Tripazine (Eaton); Triple Sulfas (Lederle); Trisem Susp. (Massengill); Tri-Sulfameth (Arlington, Funk); Trisulfazine (Central); Truozine (Abbott).

TYPHUS VACCINE.—Typhus Vaccine was official in U.S.P. XIV under the title Epidemic Typhus Vaccine. There has been no change in the monograph.

Category, Specific immunizing agent; *Usual dose*, Subcutaneous, two injections of 1 ml., 7 to 10 days apart.

UNDECYLENIC ACID [N.F. IX].—Undecylenic Acid is a fatty acid employed topically as a fungistatic agent in the treatment of superficial fungus infections. Local application occasionally produces irritation.

Category, Fungistatic agent; *For external use*, Topically as a 1 to 10 per cent ointment as required.

VITAMIN A, WATER-MISCIBLE.—This is Vitamin A, in the form of Oleovitamin A, rendered water-miscible with the aid of suitable, harmless dispersing agents. This product is used for the same purposes as is Oleovitamin A. The Vitamin A in aqueous solution is more rapidly and more completely absorbed, sometimes better tolerated and utilized, than is vitamin A in oil. It is used for the prophylactic and therapeutic treatment of vitamin A deficiencies such as nyctalopia (night blindness), xerophthalmia, follicular hyperkeratosis of the skin and other responsive dermal conditions. It is particularly valuable where gastrointestinal dysfunction impedes fat absorption such as in diseases of the liver, pancreas, biliary tract and intestines.

Category, Anti-xerophthalmic vitamin; *Usual dose*, Daily requirement—adult, 5000 U.S.P. Units, infant, 1500 Units; therapeutic—adult, 25,000 Units.

Commercial source, Acon Vitamin A Capsules, Acon Vitamin A Drops (Endo); Aquasol A Capsules, Aquasol Vitamin A Drops, Aquasol A Parenteral (U. S. Vitamin); Water-miscible Vitamin A Capsules (American Pharm. Co., Assoc. Labs., Barnes-Hind, Bio Products Ltd., R. Daniels & Co., Haack Labs.).

VITAMIN B_{12} WITH INTRINSIC FACTOR CONCENTRATE; —CAPSULES; —TABLETS.—These products possess vitamin B_{12} activity made more readily absorbable from the gastrointestinal tract of patients suffering from pernicious anemia by combination with suitable preparations of the mucosa of the stomach or intestine of domestic animals used for food by man. The approximate antianemia potency of Vitamin B_{12} with Intrinsic Factor Concentrate is expressed in U.S.P. Units (oral). The amount constituting 1 U.S.P. Unit (oral) has a vitamin B_{12} activity equivalent to that of not more than 15 mcg. of cyanocobalamin and contains not more than 300 mg., on the dried basis of the preparation constituting the intrinsic factor concentrate. The product conforms to U.S.P. requirements for *Anti-anemia Preparations*.

Vitamin B_{12}, also known as the extrinsic factor, when combined with intrinsic factor concentrate (usually obtained from stomach tissue of hogs), is effective orally for the treatment of pernicious anemia with and without neurologic complications. It is effective also by virtue of its vitamin B_{12} content in the treatment of tropical and nontropical sprue, nutritional macrocytic anemia of infancy. The intrinsic factor, which is lacking in patients with pernicious anemia, increases the efficiency of alimentary absorption of vitamin B_{12}.

The titles of these articles embody the term "Vitamin B_{12}" rather than cyanocobalamin since other forms of cobalamins active in preventing pernicious anemia may be present.

Category, Hematopoietic; *Usual dose*, 1 U.S.P. Unit (oral) daily.

Commercial source, Bevidoral Filmtabs (Abbott) Bexitab (Chicago); Bifacton Tablets (Organon); Biopar Tablets (Armour); Intrinase Tablets (Upjohn).

WATER, PURIFIED.—This monograph replaces the former monograph entitled Distilled Water, at the same time enlarging its scope to include water prepared by deionization as well as by distillation. The U.S.P. still cautions: "*Do not use Purified Water for parenteral administration or in preparations to be used parenterally. For such purposes use Water for Injection.*"

Category, Solvent.

WHITE LOTION [N.F. IX].—White Lotion provides sulfides in a therapeutically useful form for treatment of skin irritations on a symptomatic basis.

Category, Astringent, protective; *For external use*, Topically as required.

ZINC UNDECYLENATE [N.F. IX].—Zinc Undecylenate is recognized in the U.S.P. for use with Undecylenic Acid as a fungicide which is specially useful in ringworm of the scalp (tinea capitis).

Category, Fungistatic agent; *For external use*, Topically as a 20% ointment as required.

A.PH.A. BRANCHES

STUDENT BRANCHES

"Hospital Pharmacy As a Career" was discussed at the February meeting of the **Massachusetts College of Pharmacy Student Branch.** The speaker was George F. Archambault, chief of the Pharmacy Branch, Division of Hospitals, U. S. Public Health Service. . . .Another "health team" representative, Dr. F. O. Gamble, president-elect of the National Association of Chiropodists, spoke on inter-professional relations at the February meeting of the **University of Arizona Student Branch.**

"The Function of the State Board of Pharmacy" was the subject dealt with by Austin Johnston, newly appointed secretary of the New York State Board of Pharmacy, at the February meeting of the **Albany College of Pharmacy Student Branch.** Mr. Johnston discussed the licensing, law enforcement and disciplinary action functions of the board. A question and answer period followed. . . . William O'Brien, inspector for the Louisiana State Board of Pharmacy and president of the New Orleans Branch of the A.PH.A., addressed the January meeting of the **Loyola University Student Branch** on "Aspects of the Louisiana Board of Pharmacy." Mr. O'Brien stated that Louisiana's pharmacy laws were the first in the United States. Also on the agenda was a presentation of the film, "A Day At Upjohn."

Recent meetings held by the **University of Maryland Student Branch** and the **University of Arkansas Student Branch** were concerned with subjects having a distinct bearing on the members' futures: military service, with which most of the male students will be faced, and drugstore operation and management. "Your Future in the Armed Forces" touched off discussion at the January 10 meeting of the Maryland group. Participating were Col. Bernard Aabel, chief of the Medical Service Corps of the U.S. Army, and Col. James H. Kidder, special assistant to the Surgeon General on Reserve Affairs, U.S. Medical Service Corps. . . .At Arkansas, in early January, talks were given by members of various units of the Armed Forces covering service in their fields of operation. The programs were co-sponsored by the Gamma Omega Chapter of Kappa Psi fraternity. . . .Later, at the January 24 meeting of the Maryland student members, a representative of Mead-Johnson discussed "Let's Build a Baby Department." . . .And at a subsequent January meeting, Arkansas members were addressed by the chief pharmacist of the Norwich Pharmacal Company, Paul Weiseman, who spoke on "Public Relations for the Pharmacist." . . .In February, his subject was "New Product Development"—when he spoke at a meeting of the **University of South Carolina Student Branch**. . .and when the aforementioned Arkansas Branch met in February, it was to hear Abbott Laboratories' David D. Stiles who discussed the advances the profession of pharmacy has made in the past 10 years. . . .The previous month, Mr. Stiles addressed the **Washington State College Student Branch** on the implications of the prescription surveys he is supervising nationally.

"Take Inventory of Yourself" was the subject discussed at the January 11 meeting of the **Ferris Institute Student Branch** by Arnie Paulson, field representative of the S. E. Massengill Company, and Sidney Miller of Watkins Pharmacy, Muskegon, Mich. At a meeting later in the month, Dr. Richard Faust of the college staff, spoke on "Product Development."

"Telephone Courtesy—Every Day and in the Small Business" was discussed and demonstrated by a representative of the Ohio Bell Telephone Company at the January meeting of the **Ohio State University Student Branch.** The Branch is now making plans for a mock A.PH.A. Convention to be held in May. But elsewhere, plans were being shaped for the real thing. . . .The **Howard College** (Ala.) **Student Branch** voted at its February meeting to send two representatives to the Student Section meeting to be held in connection with the A.PH.A. Convention in Detroit; and members of the **Fordham University Student Branch** met in January to plan for representation when the Student Section meets during the aforementioned convention.

Two hundred and fifty members were in attendance at the January meeting of the

(Continued on page 185)

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Chloroform . . . . . 2 grs.
Potassium guaiacolsulfonate 8 grs.
Ammonium chloride . . . . . 8 grs.
Antimony and potassium tartrate . . . . . 1/12 gr.
Alcohol 3%
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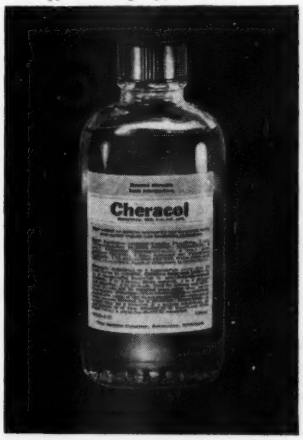

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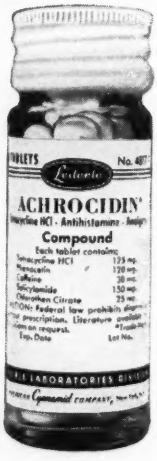

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ACHROCIDIN promptly controls a great many of those bacteria which may be present, and provides a potent prophylaxis at a time when the patient is highly susceptible to further infections. It relieves pain and discomfort, depresses fever, and alleviates nasal congestion. It is more convenient for the physician to prescribe; simpler for the patient to take.

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Branches

• • • • • • • • • • • • • • *from page 182*

Duquesne University Student Branch at which four student speakers were heard: Calvin Page's topic was "Rheumatic Fever"; Barry Tenenouser chose as his subject "Survey of Therapeutic Agents Used in the Treatment of Rheumatic Fever"; "Public Relations of the Pharmacist" was discussed by Felix Pollice; and Vincent Prugar talked on "Current Problems." The Branch puts much emphasis on student participation in meetings. Not only does this develop confidence in the student, but it enhances his feeling of belonging. The Branch's ever-increasing membership rolls bespeak the success of the program. . . .Membership is on the increase, too, in the **Medical College of South Carolina Student Branch.** The Branch honored new members at a social gathering held this past January.

Motion pictures were featured recently at six Branch meetings. "Going Our Way," a new Parke, Davis film, was shown at the February meeting of the **New England College of Pharmacy Student Branch.** Carl A. MacDonald, hospital service representative of the firm, pointed out that the physician, pharmacist and pharmaceutical manufacturer must work together as a team in providing adequate health services for the nation. . . .The February meeting of the **University of Nebraska Student Branch** was devoted to the showing of: "Do You Fill Prescriptions Here?" (supplied by the Owens-Illinois Company) and "Going Our Way." The January meeting of the Branch heard a representative of Lederle Laboratories discuss "Animal Health Programs in Relation to Pharmacy." The talk was supplemented by the showing of two films dealing with animal health problems, and the treatment of animal diseases. . . .Dean J. Lester Hayman of the **West Virginia University College of Pharmacy** showed color movies at the January meeting of the **Student Branch.** He had taken the films during visits to various pharmaceutical houses as well as many pictures of medicinal plants found in the West Virginia area. Robert E. Wallace of Eli Lilly and Company addressed the February meeting on "Poliomyelitis—Production of the Vaccine and Testing of Vaccine." . . .The **University of Illinois Student Branch** members viewed a movie on narcotic addiction at their January meeting. Also discussed at the meeting was the forthcoming convention of Student Branches in District 4 which will be held in Madison, Wisconsin. . . .The **Montana State University Student Branch** meeting of January 11 included the showing of a film made available by The Upjohn Company on "A Day at Upjohn."

During the week of February 12, Charles C. Rabe, assistant to the A.PH.A. Secretary, visited and addressed meetings of the Student Branches at the **University of Texas, University of Houston, Texas Southern University, University of Oklahoma,** and **Southwestern State College.** . . .The Branch at Southwestern held three meetings during the month of January. The programs included discussions on research problems in pharmacy, hospital pharmacy, and on insurance programs for pharmacists.

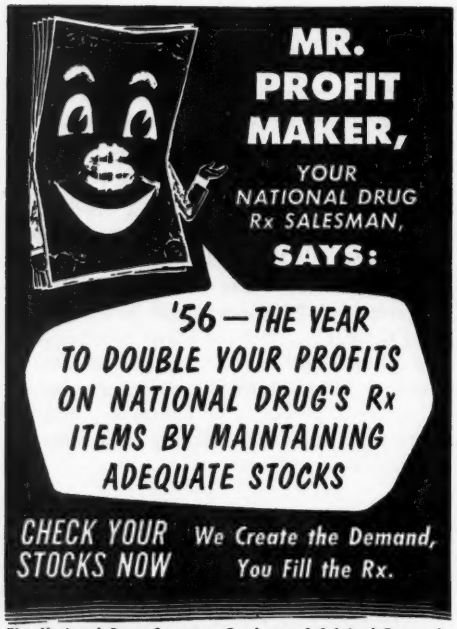
Elections

Officers for 1955–56 at the **University of New Mexico Student Branch** are Lyle Raker, Jr., president; Frank Garcia, vice president; Martha Meadows, secretary; and Nada Tangway, historian. Dr. William C. Fiedler serves as treasurer and faculty advisor. . . .New officers of the **University of North Carolina Student Branch** are: John Andrews, president; Stuart Rollins, vice president; Janice Pipes, secretary; and Harold Ball, treasurer. Dr. John Andrako is faculty advisor.

LOCAL BRANCHES

The January meeting of the **Pittsburgh Branch** was held at the Mellon Institute. Speakers on the evening program were Dr. John DeFeo, assistant professor of pharmacology and Dr. Joseph McEvilla, assistant professor of pharmacy administration, both of the University of Pittsburgh School of Pharmacy. Their topics were "The RH Factor" and "A Concept of Prescription Pricing." Dr. McEvilla, in discussing prescription pricing, stressed the need for the establishment of a professional service fee.

Dr. Gaylord Anderson, Mayo Professor of Public Health and director of Public Health of the University of Minnesota, addressed the January meeting of the **Northwestern Branch** on the subject "Polio Vaccine." . . .And during the same month, the **Indianapolis Branch** held a joint meeting with the Indiana Society of Hospital Pharmacists. The program included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discussions on "Mental Illness," "Stabilities and Shelf Life of Pharmaceuticals," "Compounding Ophthalmic Solutions," and "Over-the-Counter Drugs." The afternoon session was devoted to an inter-professional relations panel moderated by Allen V. R. Beck. Panelists included Walter Frazier, Springfield General Hospital, Springfield, Ohio; Kenneth Wood, Indiana University Medical Center, Indianapolis, Ind.; Herbert Gerding, retail pharmacist, Fort Wayne, Ind.; and Dr. Karl Kaufman, dean of Butler University College of Pharmacy, Indianapolis, Ind. J. Warren Lansdowne was the speaker at the dinner which concluded the day's activities. The meeting was presided over by Dr. Glen Sperandio, president of the Indiana Chapter of the A.S.H.P.

The Indianapolis Branch has elected the following officers for the year 1955–56: Dr. Albert Jarvis, president; Philo Burrin, vice president; and Imogene Piper, secretary-treasurer.

Newly elected officers of the **City of Washington Branch** are: George B. Hutchinson, president; Lewis L. Frey, first vice president; Lt. Col. C. S. Marchek, second vice president; John S. Mitchell, secretary, and George B. Griffenhagen, treasurer. The January meeting was addressed by George B. Griffenhagen, acting curator of the Division of Medicine and Public Health of the Smithsonian Institution, who presented a series of slides showing European pharmacies that he had visited during his recent trip abroad. . . .Newly elected officers of the **Southeast Texas Branch** are James A. Glass, president; Jewel N. Higginbotham, vice president; Dr. Ruth Kroeger, secretary; and Tom Horner, treasurer. A charter presentation banquet and meeting was held by the Branch on February 15 at the Milford House in Houston. Charles C. Rabe, assistant to the A.PH.A. Secretary, made the charter presentation. . . .The **New York Branch** re-elected its officers to serve for another year. The officers are Irving Rubin, president; Frank J. Pokorny, vice president; Harry Kaye, treasurer, and E. E. Leuallen, secretary.

"Conflicting Views Regarding the Practice of Pharmacy" was the topic for discussion at the New York Branch's January meeting at St. John's University College of Pharmacy. The student viewpoint was presented by Thomas Dembski and Stephen Weiss, students at St. John's University and Brooklyn College

of Pharmacy, respectively. The viewpoint of the practicing practitioner of pharmacy was presented by pharmacists Anthony Palladino and William de Neergaard.

The **Puget Sound Branch** was recently addressed by Dr. Robert Rutherford on "Anesthetics in Obstetrics" in which he reviewed the history of anesthetics and explained the three major types of anesthesia currently employed in obstetrics.

The February 16 meeting of the **New Orleans Branch** was devoted to addresses on "The New Heart and Lung Machine" and "Heart Disease" by Doctors Edward Hyman and John Hampton, respectively. The meeting was announced as being a post Mardi Gras carnival meeting and was held jointly with the Louisiana Society of Hospital Pharmacists and the Loyola University College of Pharmacy.

At the meeting held in January by the **New Orleans** group Dr. Fred N. Brazda, head of the department of biochemistry of the Louisiana State University Medical School, spoke on "Pharmacodynamics of Electrolyte Solutions."

"Some of the Drugs Used on the Autonomic System" was the subject discussed at the December meeting by Professor Charles J. Kelly of Xavier University.

"The Proposed Narcotic Drug Clinics" was discussed by Joseph M. Bransky, district supervisor of the Bureau of Narcotics of the United States Treasury Department, at the February 9 meeting of the **Philadelphia Branch.**

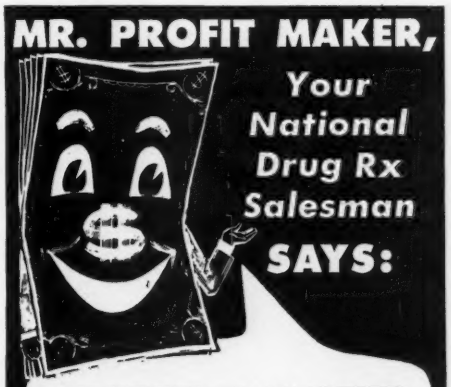
The newly established **Fresno-Madera County Branch** sponsored a fifteen-minute radio program on January 1 honoring the man chosen by the nation's radio news editors as the most newsworthy in 1955. Honored was Dr. Jonas Salk for his work in connection with the development of the poliomyelitis vaccine.

Newly elected officers of the Branch are Ralph Dashjian, president; Howard O'Brien, vice president; Charles Edson, secretary; and H. Byron Jackson, treasurer. J. Martin Winton was elected to serve as delegate to the A.PH.A. House of Delegates. . . . And in the neighboring **Northern California Branch,** newly elected officers are: Marc Laventurier, president, Marie B. Kuck, vice president; Stephen Dean, Jr., treasurer; and Molly T. Chin, secretary.

Outstanding New Product of The National Drug Company

HESPER-C LIQUID

provides 100 mg. fully active hesperidin concentrate and 100 mg. ascorbic acid per teaspoonful (5 ml.). The original synergistic nutritional supplement for capillary fragility, now in a most palatable convenient LIQUID dosage form.



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And in these pediatric conditions: The severe, extended infections peculiar to children. Children subject to frequent colds. Allergic and asthmatic children. Children who tend to bleed readily and heal slowly.

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PRODUCTS OF ORIGINAL RESEARCH

Erythromycin in treatment of pyoderma*

8/12/55

DISCHARGE SUMMARY

Patient, white female, age 39, entered hospital with a diagnosis of lymphoma, proved to be lymphosarcoma by biopsy.

Initially she was treated by X-ray radiation, adrenal cortical hormone and an antinauseant. During this regimen she developed a generalized rash which became infected. This was a drug reaction with infection due either to (1) scratching or (2) a low WBC count due to radiation. A number of boil-like lesions appeared over the body.

On 8/4 penicillin was started in a dosage of 600,000 units daily. Penicillin was continued for six days during which time the pyoderma became worse.

Aspirated material from the lesions yielded hem. S. aureus, coag. + and the following sensitivities were obtained: penicillin, more than 10 units; erythromycin, 10 mcg.; tetracycline, 50 mcg. When these results became available penicillin was discontinued.

On 8/9, erythromycin was started in a dosage of 200 mgm. q.i.d. Marked improvement was noted very soon and by 8/12 almost complete healing of all lesions had occurred. Patient was afebrile throughout.

Final Diagnosis: (1) lymphosarcoma (2) secondary pyoderma due to hemolytic Staphylococcus aureus.

Result: complete healing of secondary pyoderma with erythromycin.

*Communication to Abbott Laboratories

specific against coccic infections

Now, you can prescribe an antibiotic (*Filmtab* ERYTHROCIN) that provides *specific therapy* against staph-, strep- or pneumococci. Since these organisms cause most bacterial respiratory infections (and since they are the very organisms most sensitive to ERYTHROCIN) doesn't it make good sense to prescribe ERYTHROCIN when the infection is coccic?

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●Filmtab—Film sealed tablets; patent applied for

News and Notes

COLLEGES

The tenth Annual Postgraduate Pharmacy Clinic, sponsored by the **University of Connecticut School of Pharmacy** and the Connecticut Pharmaceutical Association will be held at the School of Pharmacy on May 2. Topics and speakers include the following: "The Tranquilizing Drugs" by Dr. Nicholas J. Giarman of the Yale School of Medicine; "Pharmaceutical Economics" by Dr. John L. Voigt of Rutgers University and "Hypo-Allergenic Agents" by J. B. Kahn, president of Ar-Ex Products Company.

MANUFACTURERS

An educational exhibit on vitamins was recently presented to the Smithsonian Institution by **Merck & Co., Inc.** On permanent display in the Gallery of Medical History in the Smithsonian's Arts & Industries Building, it graphically underlines the need for each of the 10 principal vitamins and shows actual samples mounted inside revolving, transparent globes. Outstanding historical facts on vitamin development are illustrated; and factors responsible for vitamin deficiency are pointed up. . . .The research activities of Merck will be consolidated in a new division of the company, to be called the Merck, Sharp & Dohme Research Laboratories.

Dr. Max Tishler was appointed head of the new division with the title of vice president and executive director, effective March 1. Dr. Tishler, who has been with Merck since 1937, is currently vice president for scientific activities of the Chemical Division. Dr. Randolph T. Major, who resigned as scientific vice president, effective March 1, will remain with Merck on a part-time basis in an advisory capacity.

James D. Peirce, M.D., head of the industrial medicine and safety department of **Eli Lilly and Company,** has been promoted to assistant director of personnel relations.

E. J. Foley, M.D., has been appointed vice-president of **Winthrop Laboratories.** . . .The appointment of Wesley M. Dixon, Jr., as executive vice-president of **G. D. Searle International Co.,** has been announced. . . .**Organon Inc.** has announced the appointment of James J. Greco as manager of hospital and institutional sales.

ASSOCIATIONS

Geriatrics and the problems involved in finding appropriate trade names for the many new drugs now being discovered were the subjects discussed at a public health forum sponsored by the **Alumni Association of the Brooklyn College of Pharmacy,** and held at the college on Tuesday evening, February 21. It was the first of three, the other two being held February 28 and March 13. Speakers at the first session were Dr. Harold D. Kautz, secretary of the Council on Pharmacy and Chemistry, American Medical Association; and Dr. Perrin H. Long, professor of medicine and chairman of the Department of Medicine, State University of New York College of Medicine. Presiding was Francis C. Brown, president of Schering Corp.

Addressing the second and third meetings of the 1956 forum were Dr. Howard A. Rusk, professor and chairman of the Department of Physical Medicine and Rehabilitation, New York University-Bellevue Medical Center; Dr. Leona Baumgartner, Health Commissioner of the City of New York; Bernard E. Conley, secretary of the Committee on Toxicology, American Medical Association; Dr. Henry Welch, director of the Division of Antibiotics, Food and Drug Administration; Dr. Robert J. Huebner, chief of the Section on Virus and Rickettsial Diseases, National Institutes of Health; and George Bugbee, president of the Health Information Foundation. The presiding officer of the February 28 session was Dr. E. Gifford Upjohn, president of The Upjohn Company. Leo Bertisch, president of the Whelan Drug Company, presided at the March 13 session.

The Alumni Association has been active socially, too: Sunday evening, March 11, was the date its annual dinner-dance was held. Site of the affair which honored the Class of 1906 was New York's Hotel Biltmore. The members of '06 are celebrating their Golden Jubilee.

associations, colleges, manufacturers, people . . .

PEOPLE

Joseph Baird Magnus, vice president, Magnus, Mabee & Reynard, Inc., has been elected to serve on the Board of Managers of the North-Eastern Dispensary in the City of New York, for the term ending February 1958. . . . **James J. Kerrigan,** chairman of the Executive Committee, Merck & Co., Inc., has been re-elected president of the American Foundation for Pharmaceutical Education. . . .**Francis C. Brown,** president, Schering Corporation, was re-elected vice president.

Theodore G. Klumpp, M.D., president of Winthrop Laboratories, has been elected a member of the Hospital Corporation of Peter Bent Brigham Hospital, Boston, Mass.; and **Dr. Frank E. Stirn,** director of pharmaceutical product development, Lederle Laboratories, was recently named a fellow in the New York Academy of Sciences. . . .**Dr. Noel M. Ferguson,** dean of the College of Pharmacy, University of Houston, has been appointed to the 1956 Civic Affairs Committee of the Houston Chamber of Commerce. . . .**Dr. C. S. Koh,** former dean of the Chungang University School of Pharmacy, Seoul, Korea, visited the University of Houston College of Pharmacy on February 3 and 4. Following the completion of his tour of various Colleges in the United States, Dr. Koh will return to Korea and use his observations of curricula and administrative policies in the American Pharmacy Schools to help develop the Pharmacy School in Seoul. . . . **Dr. Takeru Higuchi** professor of pharmacy at the University of Wisconsin, delivered the Julius Sturmer Memorial Lecture, annually presented by Alpha Tau Chapter of Rho Chi Society, on February 29 at the Philadelphia College of Pharmacy and Science.

Members of the House Interstate and Foreign Commerce Committee, headed by Chairman J. Percy Priest, made a two-day visit February 24 and 25 to Eli Lilly and Company to see how polio vaccine is manufactured. Shown (l. to r.) are Dr. H. A. Dettwiler, director of Lilly's biological production division, and Congressmen Jos. P. O'Hara, Chairman Priest, Oren Harris.

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VAGINAL TABLETS

effective in vaginal moniliasis

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NEW Prescription Products

All items on which information has been received in the past thirty days are reported here. Manufacturers are urged to send details of their new products as early as possible, so that pharmacists through these pages will have full information at the same time, or even before, products are detailed to the physician. For inclusion in this department, for which there is no charge, send descriptive literature to the Practical Pharmacy Edition, Journal of the American Pharmaceutical Association, 2215 Constitution Avenue, N.W., Washington 7, D.C.

B-Telve Tablets

Description: Each pink tablet contains vitamin B_{12}, 25 mcg.; and vitamin B_1, 10 mg.

Indications: For stimulation of appetite in older children and adults, and as a nutritional supplement.

Administration: One tablet daily.

Form Supplied: Bottles of 100 and 1,000.

Source: Paul Maney Laboratories, Inc., Cedar Rapids, Iowa.

Calcidrine Syrup

Description: An apricot flavored and colored syrup containing in each 30 cc.: dihydrocodeinone bitartrate, 10 mg.; pentobarbital sodium, 25 mg.; ephedrine HCl, 25 mg.; and calcium iodide, anhydrous, 910 mg.

Indications: Mucuous liquefying, antispasmodic, sedative and inhibitory to cough reflex in cough due to colds.

Administration: One to two teaspoonfuls every 2 to 4 hours. Children (6 to 10), half dose; under 6, only as directed by physician.

Form Supplied: Pint and gallon bottles. An exempt narcotic.

Source: Abbott Laboratories, North Chicago, Ill.

Camoform HCl Tablets

Description: Each grooved tablet contains 250 mg. of Camoform HCl, 6,6′-diallyl-α,α-bis(diethylamine)4,4′-bi-*o*-cresol dihydrochloride.

Indications: In treatment of intestinal amebiasis.

Administration: As directed by physician.

Form Supplied: Tubes of 20 tablets.

Source: Parke, Davis & Co., Detroit, Mich.

Chymar Injection

Description: Each cc. of the injection contains crystallized chymotrypsin, 5,000 Armour units, in sesame oil with aluminum monostearate 2%.

Indications: For treatment of badly bruised and swollen black eyes and infected leg ulcers due to thrombosis.

Administration: By intramuscular injection only, usually into the hip muscle.

Form Supplied: 5-cc. vials.

Source: The Armour Laboratories, Chicago, Ill.

Flexin Tablets

Description: Each yellow, scored tablet contains 250 mg. of zoxazolamine.

Indications: For conditions where musculoskeletal spasm is present, such as low back pain, fibrositis, spondylitis and rheumatoid arthritis, and as an adjunct in the treatment of neurological disorders such as spinal spasticity states, cerebral palsy, multiple sclerosis, cerebral vascular accidents and Parkinson's disease.

Administration: Orally as directed by physician.

Form Supplied: Bottles of 50 tablets.

Source: McNeil Laboratories, Inc., Philadelphia, Pa.

Gerizyme

Description: A wine-like flavored liquid which also stimulates the appetite, Gerizyme contains, per tablespoonful (15 cc.): 75 mg. liver concentrate; 43.17 mg. ferrous gluconate; 100 mg. each of calcium glycerophosphate, inositol, and tricholine citrate; 3.3 mg. each of thiamine HCl, riboflavin, and *d*-pantothenyl alcohol; 1 mg.

NEW *Prescription Products*

pyridoxine HCl; 33.3 mg. nicotinamide; 3.3 mcg. of B-12 activity; 0.033 mg. cobalt; 0.33 mg. copper and manganese; 2 mg. magnesium and potassium; 0.066 mg. molybdenum; 0.5 mg. zinc; and 18% alcohol.

Indications: Diet supplement for elderly patients.

Administration: One teaspoonful three times daily.

Form Supplied: 12-oz. bottles.

Source: The Upjohn Company, Kalamazoo, Mich.

Modane Tablets

Description: Each sugar coated tablet contains 1,8-dihydroxyanthraquinone (danthron), 75 mg., and *d*-calcium pantothenate, 25 mg.

Indications: For constipation and restoration of bowel motility. Improves carbohydrate and protein digestion and removes hydrogen sulfide odor from feces.

Administration: Adults—1–2 tablets after evening meal. Children (6–10 years)—1 tablet after evening meal.

Form Supplied: Bottles of 100, 500, 1,000 and 6,000.

Source: The Warren-Teed Products Company, Columbus, Ohio.

Mucogel Tablets
Mucogel-B Tablets

Description: Each flavored Mucogel tablet contains: gastric mucin, 160 mg.; magnesium glycinate, 250 mg.; aluminum hydroxide gel, 250 mg. Each flavored Mucogel-B tablet contains the above plus phenobarbital, 6 mg., and belladonna leaves extract, 5 mg.

Indications: Mucogel for hyperacidity and peptic ulcer. Mucogel-B when anticholinergic action is also desired.

Administration: Mucogel—For peptic ulcer, 2 tablets, chewed well before swallowing, every 2 hours; as antacid, 1 or 2 tablets one-half hour after meals or every 2–4 hours. Mucogel-B—1 or 2 tablets one hour after meals or every 3–4 hours.

Form Supplied: Both tablets in bottles of 100.

Source: Barrows Chemical Company, Inc., New York, N.Y.

Neo-Delta-Cortef Ointment

Description: Each Gm. of ointment contains delta-1-hydrocortisone (prednisolone) acetate, 5 mg. (0.5%); neomycin sulfate, 5 mg.; methylparaben, 0.2 mg.; butyl-*p*-hydroxybenzoate, 1.8 mg.

Indications: For rapid management of acute allergic dermatitis and treatment of contact, atopic, seborrheic dermatitis, and other inflammatory skin conditions.

Administration: Topically, 1 to 3 times daily.

Form Supplied: 5-Gm. tubes.

Source: The Upjohn Company, Kalamazoo, Mich.

Neovar Tablets

Description: Each tablet contains dihydroxypropyl theophylline (Neothylline), 100 mg., and ethaverine HCl, 30 mg.

Indications: Coronary disease, peripheral thrombosis, myocardial infarction, bronchial asthma, hypertensive states, dyspnea and renal and biliary colic.

Administration: One or two tablets, 3 or 4 times daily.

Form Supplied: Bottles of 100 and 1,000.

Source: Paul Maney Laboratories, Inc., Cedar Rapids, Iowa.

Thorazine Suppositories 25 and 100 mg.

Description: Each suppository contains 25 mg. or 100 mg. of chlorpromazine.

Indications: For control of nausea and vomiting when oral or injectable dosage are not desirable.

Administration: Children, one to three 25-mg. suppositories daily. Adults, one to three 100-mg. suppositories daily.

Form Supplied: Both sizes in boxes of 6 suppositories.

Source: Smith, Kline & French Laboratories, Philadelphia, Pa.

V-Cillin Pediatric for Suspension

Description: Dry granules for suspension with water. Each teaspoonful of the fruit flavored mixed suspension contains 125 mg. (200,000 u.) of penicillin V.

Indications: Where acid-resistant oral penicillin therapy is desirable.

Administration: One teaspoonful every six hours.

Form Supplied: Granules in dispensing bottle. Addition of 52 cc. of distilled water when dispensed makes 80 cc. of suspension which maintains its potency for at least 14 days at room temperature.

Source: Eli Lilly and Company, Indianapolis, Ind.

Vibruden Injection

Description: Contains adenosine-5-monophosphoric acid, 50 mg.; crystalline vitamin B_{12}, 100 mcg.; nicotinic acid, 20 mg.; procaine HCl 1%; benzyl alcohol, 1%.

Indications: For treatment of bursitis, osteoarthritis, chronic venous insufficiency.

Administration: As directed by physician.

Form Supplied: 10-cc. multiple-dose vials.

Source: Philadelphia Ampoule Laboratories, Philadelphia, Pa.

Vi-Mix Drops

Description: The mixture of the contents of the two bottles in the package yields an aqueous dispersion containing in each 0.6 cc.: thiamin chloride, 1 mg.; riboflavin, 1 mg.; pyridoxine HCl, 0.5 mg.; pantothenic acid (as sodium salt), 3 mg.; nicotinamide, 10 mg.; ascorbic acid, 75 mg.; vitamin B_{12} (activity equivalent), 3 mcg.; vitamin A synthetic, 5,000 u.; vitamin D synthetic, 1,000 u.

Indications: For prophylaxis or therapy in premature babies, infants, and growing children.

Administration: Infants under 6 months, 0.3 cc. daily. Older infants and children, 0.6 cc. daily. Older children 0.6–1.2 cc. daily.

Form Supplied: Packages of 30-cc. and 60-cc. sizes with dropper assembly graduated at 0.3 and 0.6 cc.

Source: Eli Lilly and Company, Indianapolis, Ind.

Other New Products

(Chemicals, clinical trial drugs, diagnostic aids, and equipment for the retail and hospital pharmacy)

Aquasol A Cream with Panthoderm

A cream containing 200,000 USP units of water-soluble vitamin A per ounce with 2% pantothenylol in a water-miscible base. Recommended to reduce scaliness, relieve itching and accelerate healing in various skin disorders. Applied by inunction 2 or 3 times daily. Supplied in 1-oz. tubes by *U. S. Vitamin Corporation.*

Aureomycin Poultry Formula

A new water-soluble preparation of chlortetracycline, which may be given to poultry either in feed or drinking water, has been introduced by *Lederle Laboratories.* Each pound of the formula contains 25 Gm. of chlortetracycline HCl. One level teaspoonful supplies approximately 200 mg. of chlortetracycline per gallon of water. Available in 1.6-oz. jars, 0.5-lb. jars and 10-lb. drums.

Citroid Compound Capsules

Capsules containing citrus bioflavonoid with aspirin and vitamin C have been marketed by *Grove Laboratories* as a cold treatment product for over-the-counter sale.

Clinistix for Urine Sugar Test

Ames Company, Inc. has introduced reagent strips which, when moistened with urine, will turn blue if glucose (sugar) is present in concentrations of 0.01% to 0.1%. The test is qualitative and the concentration of sugar cannot be estimated from the color. The reaction is due to the enzymes with which the paper strip is impregnated. Thirty strips are available in a holder that resembles a paper match book.

Cortisporin Ointment—New Size

Burroughs Wellcome & Co., Inc. has made Cortisporin Ointment available in $\frac{1}{2}$ oz. tubes with applicator tip.

D-Ate Capsules

Controlled disintegration capules (light green) each containing 15 mg. of dextro amphetamine sulfate, said to be equivalent to a dosage of 5 mg. of *d*-amphetamine sulfate taken three times daily, are marketed by *Paul Maney Laboratories.* Supplied in bottles of 100 and 1,000.

Deca-Mulcin Liquid
Deca-Vi-Caps

Mead Johnson & Company has marketed the same combination of 10 vitamins in their Deca-Vi-Sol drops in a new liquid form Deca-Mulcin for children up to 6 years and in capsule form Deca-Vi-Caps for children 6–10.

Guth Handi-Mat for Bench Tops

Polyethylene sheets in two ready cut sizes or utility rolls for use as a readily washable working surface are available from *Palo Laboratory Supplies, Inc.*

Hydeltra Tablets 1 mg.

Tablets containing 1 mg. of prednisolone are supplied by *Sharp & Dohme* as well as the 2.5-mg. and 5-mg. Hydeltra tablets. The 1-mg. tablets are available in bottles of 100 and 1,000.

Lan-O-Let Hand Cleaner

A waterless hand cleaner containing lanolin and bithionol (Actamer—Monsanto) antiseptic is applied as a spray from its pressure can, rubbed to remove grime then wiped off. The product is marketed by *Braun Laboratories.*

NEW *Prescription Products*

Morphine and Codeine Injections

Morphine sulfate injections in single-dose ampuls containing in each cc.: 1/6, 1/4, and 1/2 gr., and multiple-dose 20-cc. vials containing 1/4 gr. per cc.; and codeine phosphate injection in single-dose ampuls containing in each cc.: 1/4, 1/2, and 1 gr., and multiple-dose 20-cc. vials containing 1/2 gr. per cc. are supplied by *The Bitarine Co., Inc.*

Nika Caps

Controlled disintegration capsules (yellow) each containing: phenobarbital, 1/4 gr.; *dl*-amphetamine sulfate, 15 mg.; thyroid, 3 gr.; atropine sulfate, 1/180 gr.; aloin, 1/4 gr., are marketed by *Paul Maney Laboratories.* The dose is one capsule taken in the morning. Supplied in bottles of 100 and 1,000.

Noludar Tablets

The 200-mg. Noludar tablets (for insomnia) are now available in bottles of 500 as well as in bottles of 100 and 1,000. Noludar continues to be marketed in 50-mg. tablets and in elixir form by *Hoffmann-La Roche Inc.*

Parvex Powder (Vet.)

An anthelmintic powder containing 22% of betaine 1-piperazine carbodithioic acid is marketed by *The Upjohn Company* for the expulsion of ascarids and nodular worms of swine. It is added to dry or wet feed, one tablespoonful to each 20 lbs. of body weight given in one quarter of the total dry daily ration in one feeding for one day only. Supplied in 77-Gm. and 385-Gm. envelopes.

Polycycline Aqueous with Triple Sulfonamides

A cherry flavored suspension containing, in each 5 cc., calcium tetracycline equivalent to 125 mg. of tetracycline HCl, plus 167 mg. each of sulfadiazine, sulfamerazine, and sulfamethazine has been marketed in 2-oz. bottles by *Bristol Laboratories, Inc.*

Reserpine Alkaloid Tablets

West-ward, Inc. has made available tablets containing 2 mg., 3 mg., 4 mg., and 5 mg. of reserpine for use as tranquilizer and relaxant in the treatment of mental diseases. Use with caution in patients with history of mental depression or peptic ulcer. Dosage as directed by physician. Each strength supplied in bottles of 100 tablets.

Sterane Tablets 1 mg.

Pfizer Laboratories have marketed scored pink tablets containing 1 mg. of prednisolone in each tablet. The scored white 5-mg. Sterane tablets are also available. The 1-mg. oral tablets are supplied in bottles of 100.

Stokes Tablet Hardness Tester

An instrument which measures tablet hardness directly in kilograms of pressure required to crush tablets ranging from the smallest practical to 1/2-inch diameter is marketed by *F. J. Stokes Machine Co.*

Tarcortin Cream—New Size

The hydrocortisone (0.5%) in Tarbonis cream marketed by *Reed & Carnrick* in 7-Gm. tubes is now available also in 1-oz. tubes.

Teolaxin Capsules

Controlled disintegration capsules (light pink) each containing 100 mg. of phenobarbital, are marketed by *Paul Maney Laboratories.* Each capsule is stated to be equivalent to a dosage of 1/2 gr. of phenobarbital taken three times a day. Supplied in bottles of 100 and 1,000.

Thalajen Tablets and Cream

Phthalylsulfacetamide for treatment of gastrointestinal tract infections is marketed by *Jenkins Laboratories* in the form of 0.5-Gm. Thalajen tablets, 0.25-Gm. Thalajen JR. Tablets, and as Thalajen cream containing in each 5 cc.: phthalylsulfacetamide, 1 Gm. (20%), with kaolin 20% and pectin 1.6%. Both sizes of tablets are supplied in bottles of 100 and 1,000; the cream is supplied in pint bottles.

Theracombin Syrup

Bryant Pharmaceutical Corp. has marketed a tangerine flavored syrup containing in each 5 cc. vitamins A, 6,000 u.; D, 1,200 u.; B_1, 5 mg.; B_2, 3 mg.; B_6, 1 mg.; B_{12}, 5 mcg.; d-panthenol, 1 mg.; niacinamide, 25 mg.; calcium glycerophosphate as source of Ca, 10 mg.; and P, 8 mg.; cobalt gluconate, 0.2 mg. Recommended for intensive therapy for acute multiple avitaminoses, Theracombin syrup is supplied in bottles of 8-oz. and 1 pint.

V-Cillin Pulvules 250 mg.

Eli Lilly and Company has made available No. 1, gray and green capsules containing 250 mg. of acid-stable penicillin V in addition to their No. 3, gray and green 125-mg. capsules.

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Straight From Headquarters

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job as a retail druggist. The public generally gives a good standing to pharmacy as an occupation.

"Pharmacists themselves are divided as to public attitudes toward professional standing of their work, but even where an individual pharmacist believes the public thinks he is more businessman than professional, he generally wishes that he were considered a professional.

"There is clear evidence that more knowledge is required today of the pharmacist, and even pharmacist-managers report that about half their time is spent in prescription work. Physicians do not give the pharmacist much credit for assisting them in prescribing, but it is possible to visualize areas where cooperation is needed. Physicians do not credit the pharmacist with offering much help to them about new drugs. Generally, pharmacists do not seem to think that the physician is effectively using the knowledge which they possess.

"A third of the public state that they have asked pharmacists questions pertaining to health. Physicians say that they believe pharmacists give too much information. Pharmacists say that such inquiries are practically a matter of day-to-day experience. The pharmacists think that people pay attention to the information they give. There is evidence that pharmacists realize the delicate position they occupy in advising on health matters, but a major portion of the pharmacists believe that the public should be encouraged to ask them questions about health.

"The most interesting aspect of the information presented is the suggestion that the pharmacist has 'a potential for service to physicians and to the public generally, which is not presently being wholly realized.'"

President Heinz to Receive Lascoff Award

A.PH.A. President John B. Heinz will be honored with the J. Leon Lascoff Memorial Award by The American College of Apothecaries on the evening of April 8 when the A.C.A. holds its annual dinner in connection with its meeting in Detroit. Members of the A.C.A. will convene April 8–10 for their 15th yearly meeting during the week of the 103rd A.PH.A. Convention, April 8–13.

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